TRANSCRIPT O

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1883.

No. 180.

ESEK BUSSEY AND CHARLES A. McLEOD, APPELLANTS,

vs.

THE EXCELSIOR MANUFACTURING COMPANY.

No. 181.

THE EXCELSIOR MANUFACTURING COMPANY, APPELLANT,

vs.

ESEK BUSSEY AND CHARLES A. McLEOD.

APPEALS FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF MISSOURI.

FILED OCTOBER 25, 1880.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1883.

No. 180.

ESEK BUSSEY AND CHARLES A. McLEOD, APPELLANTS,

VS.

THE EXCELSIOR MANUFACTURING COMPANY.

No. 181.

THE EXCELSIOR MANUFACTURING COMPANY, APPELLANT,

VS.

ESEK BUSSEY AND CHARLES A. McLEOD.

APPEALS FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF MISSOURI.

INDEX.

	Original.	Print.
Caption	1	1
Bill of complaint	5	1
Subpœna	21	8
Leave granted to file answer	27	9
Answer	29	9
Replication	37	13
First amended answer	41	14
Second amended answer	42	14
Special examiner appointed	43	15
Cause submitted	45	16
Decree	45	16
Decree confirming master's report	65	18
Master's report	69	18

	Original.	Print.
Testimony of Giles F. Filley	107	22
Testimony of J. W. Bell	143	26
Bond to stay injunction	169	28
Complainants' exceptions to master's report	177	29
Final decree	189	30
Appeal allowed defendant	213	32
Appeal prayed by complainants	217	33
Appeal bonds presented and approved	219	33
Appeal bond of complainants	223	33
Appeal bond of defendant	229	34
Oral remarks of Treat, J., on exceptions to master's report	235	34
Complainants' testimony:		
Patents, &c., offered in evidence	241	35
William E. Hagan	242	35
Charles McLeod	265	45
Rufus Lape	273	52
David H. Nation	282	57
Herman Clow	317	76
Exhibit L. (Drawing of Nation's Reservoir Cooking Stove, made Nov. 8, 1872)	323	79
F. (Assignment of Nation & Little to Bussey & McLeod, June 2, 1874)	324	79
I. (Agreement between Little, Nation, Buck & Clement, April 17, 1873)	325	79
K. (Agreement between Bussey & McLeod and Excelsior Manufacturing Company, June 3, 1874)	326	80
M. (Agreement between Bussey & McLeod and Nation & Little, June 2, 1874)	331	82
Defendant's testimony:		
Patents offered in evidence	335	83
B. F. Clement	338	85
C. K. Pickles	354	96
J. F. Clement	356	97
L. A. Brigham	359	99
Bernard Grote	361	100
Charles H. Buck	362	101
James G. Clark	368	105
G. F. Filley	369	105
James W. Bell	384	116
Exhibit No. 1. (Davis & Lord's patent)	399	123
No. 2. (Barron's patent)	405	124
No. 3. (Getz's patent)	413	125
No. 4. (Stewart's patent)	417	126
No. 5. (Spaulding's patent)	423	129
No. 6. (Bussey's patent)	434	135
No. 7. (Barlow's patent, English)	440	137
No. 8. (Hermance's patent)	446	140
No. 9. (Tiffany's patent)	456	145
No. 10. (Paris's patent)	461	147
No. 11. (McDowell's patent)	472	151
No. 12. (Moore's patent)	477	153
No. 13. (Hyde's patent)	484	155
No. 14. (Hyde's patent)	489	157
No. 15. (Slade's patent)	494	158

	Original.	Print.
Exhibit No. 16. (Mitchell's patent)	501	161
No. 17. (Keep's patent)	507	163
No. 18. (Phillips's patent)	526	170
No. 19. (Crowley & Chamberlain's patent)	533	173
Bussey's reissue	541	175
Buck drawing	551	181
Filley's sketch	552	181
Clerk's certificate	555	181
Assignment of errors by complainants	556	181

1, 2 UNITED STATES OF AMERICA,
Eastern District of Missouri, ss:

In the circuit court of the United States in and for said district.

Be it remembered that on Wednesday July 11th, 1877, the following among other proceedings were had and appear of record in the circuit court of the United States for the eastern district of Missouri, to wit:

ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
THE EXCELSIOR MANUFACTURING COMPANY, defendant. } 1039.

This day come the complainants, by Messrs. Sprague and Hunt, their solicitors, and file their bill of complaint against said defendant, and 3, 4 on motion of said solicitors it is ordered that subpœna in chancery issue against said defendant, returnable to rules the first Monday, the third day of September next.

Which said bill of complaint is in the words and figures following, to wit:

5 The circuit court of the United States for the eastern district of Missouri, in equity.

To the honorable the judges of the eighth circuit and eastern district of Missouri; in equity:

Esek Bussey and Charles A. McLeod, citizens and residents of the State of New York, bring this their bill of complaint against the Excelsior Manufacturing Company of St. Louis, a corporation organized under the laws of the State of Missouri, and a citizen of the State of Missouri, and a resident of the eastern district thereof.

And thereupon your orators complain and say that your orator, Esek Bussey, a citizen of the United States, on the twenty-fourth day of July, A. D. 1866, was the true and original inventor of a new and useful improvement in cooking stoves, which said improvement was not known or used by others before the invention thereof by your orator, the said Esek Bussey, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in 6 cooking stoves, and fully and in all respects complied with all requirements of the law in that behalf, and especially made oath that he verily believed himself to be the true and original inventor or discoverer of the said improvement, and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted to him for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of his said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which the said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America in due form of law in all respects, bearing date the twenty-fourth day of July, A. D. 1866, and numbered 56525, whereby was granted unto your orator, the said Esek Bussey, his heirs, executors, administrators, or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending to others to be used, the said improvement, which is entitled in said letters patent a new and useful cooking stove; and the said letters patent having been signed by the Secretary of the Interior of the United States, and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said Esek Bussey.

And your orators further show unto your honors, that afterwards your
orator, the said Esek Bussey, surrendered the said letters patent to
7 the Commissioner of Patents, in due form of law, and such pro-
ceedings were had that said Commissioner did, on the twenty-eighth
of September, A. D. 1869, reissue to the said Esek Bussey letters patent of the United States of America, entitled for a new and useful cooking stove; signed by the Secretary of the Interior, and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents, whereby was granted unto your orator, the said Esek Bussey, his heirs, executors, administrators, or assigns, for the term of seventeen years from the twenty-fourth day of July, 1866 (being the date of the said surrendered letters patent), the full and exclusive right and liberty of making, using, and vending to others to be used, the said improvement, entitled in the said reissued letters patent a new and useful cooking stove, a description whereof was annexed to and formed a part of the said reissued letters patent.

And your orators further show unto your honors that afterwards your orator, the said Esek Bussey, sold, assigned, and transferred unto Charles A. McLeod, the other of your orators, an interest in said letters patent, which said assignment was duly recorded in the Patent Office at Washington, as will more fully appear upon reference to said assignment or a certified copy thereof, which your orators are ready to produce and prove whenever required so to do by this honorable court.

And your orators further show unto your honors that afterwards your orators surrendered the last aforesaid letters patent to the Commissioner of Patents in due form of law, and such proceedings were had that said
Commissioner did, on the first day of February, A. D. 1870, reissue to
your orators reissued letters patents of the United States of America
8 entitled for "a new and useful cooking stove," signed by the Sec-
retary of the Interior and countersigned and sealed with the seal
of the Patent Office by the Commissioner of Patents, and numbered reissue 3815, whereby was granted unto your orators, their heirs, executors, administrators, or assigns, for the term of seventeen years from the twenty-fourth day of July, A. D. 1866 (that being the date of the original surrendered letters patent), the full and exclusive right and liberty of making, using, and vending to others to be used, the said invention, a description whereof was annexed to and formed a part of said reissued letters patent, as by reference to the same or a certified copy thereof, ready to be produced and proved, as this honorable court shall direct, will more fully at large appear.

And your orators further show unto your honors that your orators, from and after the date of the last-mentioned reissued letters patent, made and sold a large number of stoves containing the said invention, and made great gains and profits by such manufacture and sale of said stoves, and would have made still greater gains and profits if it had not been for the unlawful acts and doings of the defendants, as hereinafter set forth.

And your orators further show unto your honors that David H. Nation, a citizen of the United States, was, on the ninth day of September, A. D. 1873, the true and original inventor or discoverer of a new and useful improvement in reservoir cooking stoves, which improvement was not known or used by others before the invention or discovery thereof by the said David H. Nation, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves; and fully and in all respects complied with all the requirements of the law in that be-
9 half, and especially made oath that he verily believed himself to be the true and original inventor or discoverer of the said improvement; and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted to him for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of his said improvement in such full, clear, and exact terms as to enable any one skilled in the art to which said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America, in due form of law in all respects, bearing date the ninth day of September, A. D. 1873, and numbered 142717, whereby was granted unto the said David H. Nation, his heirs or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending the said improvement, which is entitled in said letters patent "a new and useful improvement in reservoir cooking stoves," and the said letters patent having been signed by the Secretary of the Interior of the United States, and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said David H. Nation, as by reference to the same or a certified copy thereof, ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that David H. Nation and Ezekiel C. Little, citizens of the United States, were, on
10 the sixteenth day of September, A. D. 1873, the true and original inventors or discoverers of a new and useful improvement in reservoir cooking stoves, not known or used by others before the invention or discovery thereof by the said David H. Nation and Ezekiel C. Little, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves, and fully and in all respects complied with all the requirements of the law in that behalf, and especially made oath that they believed themselves to be the true and original inventors or discoverers of the said improvement;

and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted to them for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of their said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which the said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letter' patent to be made out and issued in the name of the United States of America, in due form of law in all respects, bearing date the sixteenth day of September, A. D. 1873, and numbered 142931, whereby was granted unto the said David H. Nation and Ezekiel C. Little, their heirs or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending to others the said improvement, which is entitled in said letters patent as "a new and useful improvement in reservoir cooking stoves;" and the said letters patent having been signed by the Secretary of the Interior of the United States, and countersigned and 11 sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said David H. Nation and Ezekiel C. Little, as by reference to the same or a certified copy thereof, ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that the said David H. Nation and Ezekiel C. Little, were, on the sixteenth day of September, A. D. 1873, the true and original inventors or discoverers of a new and useful improvement in reservoir cooking stoves, not known or used by others before the invention or discovery thereof by the said David H. Nation and Ezekiel C. Little, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves; and fully complied with the requirements of the law in that behalf, and especially made oath that they verily believed themselves to be the true and original inventors or discoverers of the said improvement; and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted unto them for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of their said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America, in due form of law in all 12 respects, bearing date the sixteenth day of September, A. D. 1873, numbered 142932, whereby was granted unto the said David H. Nation and Ezekiel C. Little, their heirs or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending to others, the said improvement, which is entitled in said letters patent a new and useful improvement in reservoir cooking stoves; and the said letters patent having been signed by the Secretary of the Interior of the United States, and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered unto the said David H. Nation and Ezekiel C. Little, as by reference to the same or a certified copy thereof, ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that the said David H. Nation and Ezekiel C. Little, on the sixteenth day of September, A. D. 1873, were the true and original inventors or discoverers of a new and useful improvement in reservoir cooking stoves, not known or used by others before the invention thereof by the said David H. Nation and Ezekiel C. Little, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves, and fully and in all respects complied with all the requirements of the law in that behalf, and especially made oath that they believed themselves to be the true and original inventors or discoverers of the said improvement; and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the 13 United States might be granted to them for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of their said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which the said invention most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America, in due form of law in all respects, bearing date the sixteenth day of September, A. D. 1873, and numbered 142933, whereby was granted unto the said David H. Nation and Ezekiel C. Little, their heirs or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending to others the said improvement, which is entitled in said letters patent as a new and useful improvement in reservoir cooking stoves, and the said letters patent having been signed by the Secretary of the Interior and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said David H. Nation and Ezekiel C. Little as by reference to the same, or a certified copy thereof ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that the said David H. Nation and Ezekiel C. Little, on the sixteenth day of September, A. D. 1873, were the true and original inventors or discoverers of a new and useful improvement in reservoir cooking stoves, not known or used by others before the invention thereof by the said David H. Nation and Ezekiel C. Little, who thereupon did apply to the Commissioner 14 of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves, and fully and in all respects complied with all the requirements of the law in that behalf, and especially made oath that they believed that they were the true and original inventors or discoverers of the said improvement; and also paid into the Treas-

ury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted to them for said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of their said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which the said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America, in due form of law in all respects, bearing date the sixteenth day of September, A. D. 1873, and numbered 142934, whereby was granted unto the said David H. Nation and Ezekiel C. Little, their heirs or assigns, for the term of seventeen years from the date thereof, the full and exclusive right and liberty of making, using, and vending to others the said improvement, which is entitled in said letters patent an improvement in reservoir cooking stoves, and the said letters patent having been signed by the Secretary of the Interior of the United States and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said David H. Nation and Ezekiel C. Little, as by reference to the same, or a certified copy thereof
15 ready to be produced and proved as this honorable court shall
direct, will more fully and at large appear.

And your orators further show unto your honors that the said David H. Nation and Ezekiel C. Little, on the sixteenth day of September, A. D. 1873, were the true and original inventors or discoverers of a new and useful improvement in reservoir cooking stoves, not known or used by others before the invention or discovery thereof by the said David H. Nation and Ezekiel C. Little, who thereupon did apply to the Commissioner of Patents of the United States for letters patent for the said improvement in reservoir cooking stoves, and fully and in all respects complied with all the requirements of the law in that behalf, and especially made oath that they believed themselves to be the true and original inventors or discoverers of the said improvement; and also paid into the Treasury of the United States the sum of thirty-five dollars, and presented to the Commissioner of Patents of the United States a petition that letters patent of the United States might be granted to them for the said improvement; and also delivered and filed in the office of the said Commissioner of Patents a written description of their said improvement in such full, clear, and exact terms as to enable any person skilled in the art to which the said improvement most nearly appertains to make and use the same, duly signed and witnessed; and thereupon the said Commissioner of Patents caused letters patent to be made out and issued in the name of the United States of America, in due form of law in all respects, bearing date the sixteenth day of September, A. D. 1873, and numbered 142935, whereby was granted unto the said David H. Nation and Ezekiel C. Little,
their heirs or assigns, for the term of seventeen years from the
16 date thereof, the full and exclusive right and liberty of making,
using, and vending to others the said improvement, which is entitled in said letters patent as "a new and useful improvement in reservoir cooking stoves," and the said letters patent having been signed by the

Secretary of the Interior of the United States, and countersigned and sealed with the seal of the Patent Office by the Commissioner of Patents of the United States, and the same having been recorded, were issued and delivered to the said David H. Nation and Ezekiel C. Little, as by reference to the same, or a certified copy thereof ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that the said David H. Nation and Ezekiel C. Little, on the second day of June, A. D. 1874, by assignment conveyed to your orators all their right, title, and interest in and to the several letters patent aforesaid, as by reference to the said assignment, or a certified copy thereof ready to be produced and proved as this honorable court shall direct, will more fully and at large appear.

And your orators further show unto your honors that since the date of the said assignment they have manufactured a great number of stoves containing the improvements described and claimed in the aforesaid letters patent, and that they have made great gains and profits therefrom, and would have made still greater gains and profits from the manufacture and sale of said stoves, and been of great advantage to the public, if it had not been for the wrongful and unlawful acts of the said defendant hereinafter set forth.

17 And your orators further show unto your honors that the said defendants have, since the first day of January, A. D. 1875, at St. Louis, in said district, made, used, and vended to others a large number of stoves, containing in each stove the improvements described in and secured to your orators by the said several letters patent, without the consent or allowance of your orators, to the great injury and damage of your orators, to wit, in the sum of fifty thousand dollars.

All of which actings and doings are contrary to equity and good conscience, and tend to the manifold injury of your orators.

In consideration whereof, and forasmuch as your orators can only have adequate relief in this honorable court, where matters and things of this kind are properly cognizable by statute, to the end, therefore, that the said defendants may, if they can, show why your orators should not have the relief hereby prayed, and may upon the corporal oath of the president or some other proper officers of said corporation, and according to his best and utmost knowledge, remembrance, information, and belief, full, true, direct, and perfect answer make to the matters and things hereinbefore stated and charged;

And that the said defendants may answer the premises, and that they may be decreed to account with and pay over to your orators the profits which they, the said Excelsior Manufacturing Company, of St. Louis, have or might have made by their infringement of said letters patent in such unlawful manufacture, use, and sale of such stoves containing the improvements described in and secured to your orators by the aforesaid several letters patent:

18 May it please your honors, the premises considered, to grant unto your orators a writ of injunction issued out of and under the seal of this honorable court (or issued by one of your honors) according to the form of the statute in such case made and provided, enjoining and restraining the said Excelsior Manufacturing Company, of St.

Louis, their clerks, attorneys, agents, servants, and workmen from making, using, or vending to others any stoves containing the improvements described in and secured to your orators by the aforesaid letters patent:

And that your orators may have such other and further relief as to your honors may seem meet.

May it please your honors to grant unto your orators not only the writ of injunction conformable to the prayer of this bill, but also a writ of subpoena, directed to the said Excelsior Manufacturing Company, commanding them on a day certain therein to be named to be and appear in this honorable court, and then and there to answer the premises, and to stand to, perform, and abide such further order, direction, and decree as may be made against them.

And your orators, as in duty bound, will ever pray.

ESEK BUSSEY.
CHAS. A. McLEOD.

SPRAGUE & HUNT,
Solicitors and of Counsel for Complainants.

19, 20 UNITED STATES OF AMERICA,
Northern District of New York, ss:

At Troy, in the county of Renssalear, and district aforesaid, on this 28th day of June, A. D. 1877, personally appeared the above-named Charles A. McLeod, who, being duly sworn according to law, deposeth and says that he is one of the complainants in the foregoing bill, and has read the same and knows the contents thereof, and that the said bill is true of his own knowledge, except those matters and things which are stated to be on information and belief, and as to those matters he believes them to be true.

JOHN G. LAMPERT,
United States Commissioner for the Northern District of New York.

21, 22 Which said subpoena in chancery, with the marshal's return thereon, is as follows, to wit:

UNITED STATES OF AMERICA,
Eastern District of Missouri, set:

In the circuit court of the United States in and for said district.

The President of the United States to the Excelsior Manufacturing Company of St. Louis (a corporation), greeting:

You are commanded to be and appear at rules to be held at the office of the clerk of the circuit court of the United States in and for the eastern district of Missouri on the first Monday of September next, at the city of St. Louis, then and there to answer the bill of complaint of Esek
23, 24 Bussey and Charles A. McLeod, citizens of the State of New York,
filed against you on the 11th day of July, 1877; hereof fail not.

Witness the honorable Morrison R. Waite, Chief Justice of the United States, the 12th day of July, 1877. Issued at office in the city of St. Louis, under the seal of said circuit court, the day and year last aforesaid.

[SEAL.]

M. M. PRICE, *Clerk,*
By A. P. SELBY, *Deputy.*

MEM.—The defendant to enter its appearance in this suit in the clerk's office on or before the day at which the writ is returnable, otherwise the bill may be taken pro confesso.

M. M. PRICE, *Clerk*,
By A. P. SELBY, *Deputy*.

25, 26 *Marshal's return.*

UNITED STATES OF AMERICA,
Eastern District of Missouri, sct:

I have executed the within writ by delivering a copy thereof, with a copy of a bill of complaint, to J. W. Bell, secretary of the within-named Excelsior Manufacturing Co., at said company's office (the president and vice-president of said company being absent), on the 12th day of July, A. D. 1877, in the above district.

H. W. LEFFINGWELL,
United States Marshal Eastern District of Missouri,
By O. K. WHEELER, *Deputy*.

27, 28 And afterwards, to wit, on September 29th, 1877, the following further proceedings were had in said cause, to wit:

ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
EXCELSIOR MANUFACTURING CO., DEFENDANT. } #1039.

On motion of defendant, by solicitor, leave is granted to file answer on or before November rules.

And afterwards, to wit, on October 25th, 1877, the defendant filed its answer, which is in words and figures following, to wit:

29 *Answer.*

Circuit court of the United States within and for the eastern district of Missouri, in the eighth circuit.

ESEK BUSSEY AND CHARLES A. MCLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY of Saint Louis, defendant. } In equity. No. 1039.

To the honorable the judges of the circuit court of the United States in and for the eastern district of Missouri:

The answer of The Excelsior Manufacturing Company of Saint Louis, defendant, to the bill of complaint of Esek Bussey and Charles A. McLeod, complainants.

This defendant, now and at all times hereafter saving and reserving to itself all benefit or advantage of exception which can or may be had or taken to the many errors, uncertainties or imperfections in the said complainants' said bill of complaint contained, for answer thereunto, or unto

so much and such parts thereof as this defendant is advised is or are material or necessary for it to make answer unto, this defendant, answering, says that it admits, on information and belief, that the said several letters patent, both original and reissued, as in said bill set forth, were granted in the manner, for the purpose, and at the several dates as in said bill alleged, but this defendant denies any knowledge, information or
30 belief in respect to any one or either of the several assignments in said bill mentioned, and therefore this defendant denies the same and each of them, and leaves the complainants to make such proof in relation thereto as they may be advised.

Further answering, this defendant denies any knowledge, information, or belief as to whether the said complainants has made or sold a large number or any number of stoves containing said inventions, or either of them, or whether they made great or and gains any profit from any such manufacture and sale, and consequently this defendant denies the truth of each and every such allegation contained in said bill.

Further answering, the defendant denies that it has, since the 1st day of January, A. D. 1875, made, constructed, used, or vended to others to be used, any stove or stoves embodying in their construction and the improvements described and claimed in said reissued letters patent No. 3815, bearing date February 1st, 1870; or in said letters patent No. 142717, bearing date September 9th, 1873; or in said letters patent No. 142931, bearing date September 16th, 1873; or in said letters patent No. 142932, bearing date September 16th, 1873; or in said letters patent No. 142935, bearing date September 16th, 1873, or that it has in anywise infringed upon any exclusive rights which said complainants can or may have under and by virtue of said several letters patent, as in said bill alleged and set forth.

Further answering, this defendant says that it has manufactured, and sold to others to be used, stoves embodying in their construction the devices set forth in the several claims of said letters patent No. 142933, bearing date September 16th, 1873, and also the devices set forth in the claims of said letters patent No. 142934, of the date last mentioned, but this defendant denies that by such manufacture and sale it has infringed upon any exclusive right which complainants can in law or equity possess by virtue of said letters patent, as will be more fully shown by this defendant in this its answer hereafter.

And for a further answer and complete defence to the causes of action set forth in said bill, this defendant denies that the said Esek Bussey
31 was the original and first inventor of the improvements claimed in said reissued letters patent No. 3815, bearing date February 1st, 1870, but avers that long anterior to the alleged invention thereof by the said Bussey the same were well known to and had been invented and discovered by one Richard M. Hermance, a resident of Middletown, in the State of New York, and was shown and described in certain letters patent of the United States as follows, to wit:

Letters patent for anthracite coal stoves, granted William Davis and and R. W. Lord, November 23d, 1829.

Letters patent for ship galleys and cooking stoves, granted Benjamin Spratley, September 25th, 1837, No. 402.

Letters patent for improvement in galleys and cooking stoves, granted James Barron, October 6th, 1837, No. 422.

Letters patent for steam cooking stove, granted Peter Getz, January 11th, 1840, No. 1469.

Letters patent for "improvement in cooking stoves," granted P. P. Stewart, January 18th, 1859, No. 22631.

Letters patent for cooking stove, granted Daniel E. Paris, assignee of S. B. Spaulding, June 19th, 1866, No. 2291, it being a reissue of letters patent granted said Spaulding June 22d, 1858.

Letters patent for cooking stove, granted Esek Bussey, July 17th, 1866, No. 56488.

Also in letters patent of the Kingdom of Great Britain, for improved cooking apparatus, granted John Barlow, July 2d, 1816, No. 4044.

Also in certain French letters patent for cooking stove, granted Beurel and Dertelle-Potoine, December 18th, 1850, and the several certificates of addition thereto, bearing date January 29th, 1852, and September 1st, 1852.

Further answering, this defendant denies that the said David H. Nation was the first and original inventor of the improvements claimed in said letters patent No. 142717, bearing date September 9th, 1873, but avers that long anterior to the alleged invention thereof by the said Nation the same were known to and discovered by one Joseph B. Wilkinson, of Troy, New York, and by one Dennis G. Littlefield, of Albany, New 32 York, and was shown and described in certain letters patent of the United States as follows, to wit:

Letters patent for cooking stove, granted Joseph B. Wilkinson, June 29th, 1869, No. 91993.

Letters patent for attaching covers to stoves, &c., granted Dennis G. Littlefield, March 13th, 1866, No. 53251.

Further answering, this defendant denies that the said David H. Nation and Ezekiel C. Little were the first, original, and joint inventors of the improvements claimed in said letters patent No. 142931, bearing date September 16th, 1873, but avers that long anterior to the alleged invention thereof by the said Nation and Little the same were fully shown and described in certain letters patent of the United States, as follows, to wit:

Letters patent for cooking stove, granted Daniel E. Paris, assignee of S. B. Spaulding, June 19, 1866, being reissue No. 2291.

Letters patent for cooking stoves, granted Addis E. Chamberlain and John B. Crowley, November 2d, 1872, No. 132711.

Further answering, this defendant denies that the said David H. Nation and Ezekiel C. Little were the first, original, and joint inventors of the improvement claimed in said letters patent No. 142932, No. 142933, and 142934, bearing date September 16, 1873, but on the contrary avers that long anterior to the alleged invention thereof by the said Nation and Little the same was well known to Giles F. Filley, then and now a resident of Saint Louis, Missouri, the president of the Excelsior Manufacturing Company, defendant above named, in whose employ said Nation and Little were then and are now, and by whom said improvements were fully explained and described to the said Nation and Little for the purpose of having them, in the regular course of their business as employees of said defendant, make and construct stoves and patterns for stoves to be manufactured by this defendant and sold for its benefit.

Further answering, this defendant denies that the said David H. Na-

tion and Ezekiel C. Little were the first, original, and joint inventors of the improvements claimed in said letters patent No. 141932, bearing date September 16, 1873, but on the contrary avers that long anterior to the alleged invention thereof by the said Nation and Little the same
33 were fully described and shown in certain letters patent of the United States, to wit:

Letters patent for cooking stove, granted P. P. Stewart, January 18, 1859, No. 22681.

Letters patent for cooking stove, granted Richard M. Hermance, April 25, 1870, No. 102462.

Letters patent for improvement in combined water tank and warming closet, granted Joel Tiffany, August 17, 1869, No. 93771.

Letters patent for cooking stove, granted Daniel E. Paris, assignee of S. B. Spaulding, June 19, 1866, being reissue No. 2291.

Letters patent for cooking stove, granted Esek Bussey, July 17, 1866, No. 56488.

Further answering, this defendant denies that said David H. Nation and Ezekiel C. Little were the first, original, and joint inventors of the improvement claimed in said letters patent, No. 142933, bearing date September 16, 1873; but, on the contrary, avers that long anterior to said alleged invention thereof by the said Nation and Little the same were fully described and shown in certain letters patent of the United States, to wit:

Letters patent for cooking stove, granted W. L. McDowell, May 16, 1871, No. 114838.

Letters patent for cooking stove, granted Daniel E. Paris, assignee of S. B. Spaulding, June 19, 1866, being reissue No. 2291.

Letters patent for cooking stove, granted P. P. Stewart, January 18, 1859, No. 22681.

Letters patent for cooking stove, granted Richard M. Hermance, April 26, 1870, No. 102462.

Letters patent for improvement in combined water tank and warming closet, granted Joel Tiffany, August 17, 1869, No. 93771.

Further answering and in support of the allegation that the said David H. Nation and Ezekiel C. Little were not the first, original, and joint inventors of the improvements claimed in said letters patent No. 142934, bearing date September 16, 1873, this defendant avers that long anterior to said alleged invention thereof by the said Nation and Little the same were fully described and shown in certain letters patent of the United States, to wit:

34 Letters patent for reservoir cooking stove, granted W. N. Moore, November 16, 1869, No. 96826.

Letters patent for cooking stove, granted Daniel E. Paris, assignee of S. B. Spaulding, June 19, 1866, No. 2129.

Letters patent for improvement in stoves, granted James R. Hyde, June 10, 1862, and March 24, 1863, being numbered respectively 35564 and 37966.

Letters patent for improvement in combined water tank and warming closet, granted Joel Tiffany, August 17, 1869, No. 93771.

Letters patent for improvement in stoves, &c., &c., granted Caleb Slade, November 11, 1837, No. 457.

Letters patent for cooking stove, granted Esek Bussey, February 1, 1870, being reissue No. 3815.

Further answering, and as an additional defence to any claim said complainants can make under and by virtue of said letters patent, No. 142,934, this defendant says that the essential features of the pretended invention set forth therein were well known and in public use among stove manufacturers generally long anterior to any alleged invention thereof by the said Little and Nation, and among other manufacturers by Giles F. Filley, of Saint Louis, Missouri, at Saint Louis aforesaid, which fact this defendant will prove by the testimony of said Giles F. Filley and of Frederick Hawes, both of St. Louis, and numerous other witnesses.

Wherefore this defendant humbly submits and insists that under the facts and circumstances as above alleged the said complainants have no right to any further or other answer to said bill or any part thereof than as above given, and no right of injunction, account, or other relief prayed for in said bill, and it therefore asks to be hence dismissed with its reasonable costs and charges in this behalf most wrongfully sustained.

EXCELSIOR MANUFACTURING CO.,
By G. F. FILLEY, *Pres.*

SAM'L S. BOYD,
Defendant's Solicitor.

35, 36 And afterwards, to wit, on December 1st, 1877, the said complainants filed their replication, which is in words and figures following, to wit:

37, 38 *Replication.*

The circuit court of the United States for the eastern district of Missouri.
In equity.

ESEK BUSSEY AND CHARLES A. McLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY, defendants.

The replication of the above-named complainants to the answer of the Excelsior Manufacturing Company, defendants.

These repliants, saving and reserving to themselves now and at all times hereafter all and all manner of benefit and advantage of exception which may be had or taken to the manifold insufficiencies of the said answer, for replication thereunto say that they will aver, maintain, and prove their bill of complaint to be true, certain, and sufficient in the law to be answered unto, and that the said answer of the said defendant is uncertain, untrue, and insufficient to be replied unto by these repliants, without this, that any other matter or thing whatsoever in the said answer contained material or effectual in the law to be answered unto, and not herein and hereby well and sufficiently replied unto, confessed and avoided, traversed or denied, is true; all of which matters and things these repliants are and will be ready to aver, maintain, and prove, as this honorable court shall direct, and humbly pray as in and by their said bill they have already prayed.

SPRAGUE & HUNT,
Solicitors for Complainants.

39, 40 And afterwards, to wit, on January 11th, 1878, the defendant filed the following amended answer, to wit:

41 *First amended answer.*

Circuit court of the United States within and for the eastern district of Missouri in the eighth circuit.

Esek Bussey and Charles A. McLeod, complainants,
vs.
The Excelsior Manufacturing Company of Saint Louis, defendant.
} In equity. No. 1039.

And now comes the defendant above named and, by consent, amends its answer hitherto filed by adding thereto the following:

Further answering, this defendant denies that the said David H. Nation and Ezekiel C. Little were the first, original, and joint inventors of the improvements claimed in said letters patent No. 142932, No. 142933, and No. 142934, bearing date September 16th, A. D. 1873, but, on the contrary, avers that long anterior to the alleged invention thereof by the said Nation and Little the same were known to and used by Charles H. Buck publicly, in the city of Saint Louis, Missouri, and at the foundry of said Buck in said city; and this defendant expects to prove these facts by the testimony of said Charles H. Buck, Charles H. Buck, jr., B. F. Clement, J. F. Clement, Lucius A. Brigham, Bernard Grote, and others, all residents of said city of Saint Louis, Missouri; also that the same were so known to and publicly used by one Daniel E. Paris, a resident of Troy, in the State of New York, where the same was used by said Paris, and the same were fully shown and described in certain letters patent of the United States granted said Daniel Paris on the 11th day of April, A. D. 1871. No. 113556.

Excelsior Manufacturing Co.,
By SAM'L S. BOYD, *Its Solicitor.*

Consent is hereby given to the filing of the above and foregoing amendment, and the receipt of a copy thereof is hereby acknowledged, it being understood that this consent is given without prejudice to former proceedings in this case.

SPRAGUE & HUNT,
Solicitors for Complainants.

42 And afterwards, to wit, on April 29th, 1878, the said defendant, by leave of court, filed the following second amended answer, to wit:

Second amended answer.

Circuit court of the United States within and for the eastern district of Missouri in the eighth circuit.

ESEK BUSSEY AND CHARLES A. McLEOD, complainants, *vs.* THE EXCELSIOR MANUFACTURING COMPANY of Saint Louis, defendant.	In equity. No. 1039.

And now comes the defendant above named and, by consent, amends its answer hitherto filed by adding thereto the following:

Further answering, and in support of its allegation that the said David H. Nation and Ezekiel C. Little were not the first, original, and joint inventors of the improvements claimed in said letters patent in said bill set forth, this defendant avers that the same were, long anterior to any invention thereof by the said Nation and Little, fully shown and described in the following letters patent of the United States, to wit:

Letters patent for cooking stove, granted J. H. & T. S. Mitchell on the 21st December, 1869. No. 98086.

Letters patent for improvement in cooking stoves, granted Wm. J. Keep on the 12th December, 1871. No. 121876.

Letters patent for improvement in reservoir cooking stoves, granted George H. Phillips 27th December, 1870, being reissue No. 4219.

Letters patent for improvement in cooking stoves, granted J. B. Crowley and A. E. Chamberlain 7th February, 1871. No. 111517.

EXCELSIOR MANUFACTURING CO.,
By SAM'L S. BOYD, *Its Solicitor.*

Consent is given hereby to the filing of the above and foregoing amendment, and the receipt of a copy is hereby acknowledged, it being understood that this consent is without prejudice to former proceedings in this case.

SPRAGUE & HUNT,
Solicitors for Complainants.

43, 44 And afterwards, to wit, on May 2nd, 1878, the following further proceedings were had in said cause, to wit:

ESEK BUSSEY ET AL., COMPLAINANTS, *vs.* EXCELSIOR MANUFACTURING COMPANY, DEFENDANT.	#1039.

This day come the parties, by their solicitors, and file agreement for the appointment of a special examiner; it is thereupon ordered that L. L. Walbridge be, and he is hereby, appointed special examiner in accordance with said agreement.

And afterwards, to wit, on October 26th, 1878, the following further proceedings were had of record in said cause, to wit:

45, 46 ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
EXCELSIOR MANUFACTURING CO., DEFENDANT. } #1039.

This day come the said parties, by their solicitors, and submit this case to the court and consent that decree may be entered in vacation, as of the present term of this court.

And afterwards, to wit, on December 2nd, 1878, the following further proceedings were had in said cause, to wit:

ESEK BUSSEY AND CHARLES A. McLEOD, COMPLAINANTS,
vs.
THE EXCELSIOR MANUFACTURING COMPANY OF ST. LOUIS, defendant. } 1039.

47, 48 This cause coming on to be heard on the pleadings and proofs and upon the agreements of Charles J. Hunt, esquire, of counsel for complainant, and of Samuel S. Boyd, esquire, of counsel for defendant, and the court having considered the same, it is hereby ordered, adjudged, and decreed that the said defendant does not infringe the said letters patent issued to the said complainants Esek Bussey and Charles A. McLeod for a new and useful improvement in cooking stoves, dated February 1st, A. D. 1870, and numbered Reissue No. 3815, and that as to such patent the bill is hereby dismissed.

And it is further ordered, adjudged, and decreed, that the letters
49, 50 patent issued to the said David H. Nation and Ezekiel C. Little for an improvement in reservoir cooking stoves, dated September 16th, A. D. 1873, and numbered 142,933, are good and valid letters patent, and that the said complainants are owners of the same: that the said defendant has infringed the said letters patent by making, using, and vending reservoir cooking stoves, containing the combination with the back plate of a cooking stove of a reservoir arranged on a support about midway between the top and bottom plates of the stove and the air chamber between the stove back and the reservoir front open at the top and communicating with the air in the room; that the said defendant has also
51, 52 infringed the said letters patent by making, using, and vending reservoir cooking stoves containing the combination with the stove and reservoir, of the small opening, the sheet of flue under the entire bottom of the reservoir, and the small exit or pipe as charged in the said bill of complaint; that the said complainants are entitled to have a perpetual injunction to restrain the said defendant, its clerks, attorneys, agents, servants, and workmen, and all claiming or holding under or through the said defendant from making, using, or vending, or in any manner disposing of reservoir cooking stoves containing the invention or improvement described in said letters patent, namely, the combination with the
53, 54 back plate of a cooking stove of a reservoir arranged on a support about midway between the top and bottom plates of the stove and the air chamber between the stove back and the reservoir front open at the top and communicating with the air of the room, or from making,

using, and vending reservoir cooking stoves containing the combination,
with the stove and reservoir, of the small opening, the sheet flue under the
entire bottom of the reservoir, and the small exit passage or pipe.

And it is further ordered, adjudged; and decreed that the letters patent
granted to the said David H. Nation and Ezekiel C. Little for an improvement
in reservoir cooking stoves, dated September 16th, 1873,
55, 56 and numbered 142943, are good and valid letters patent, and that
the said complainants are the owners of the last aforesaid letters
patent, and also that the said defendant has infringed the last aforesaid
letters patent by making, using, and vending reservoir cooking stoves
having a detachable base pan or flue shell attached to the body at a point
near the centre of the back plate of the stove by means of hooks cast on
the base-pan and pins on the stove body, and also by making, using, and
vending reservoir cooking stoves having a portable reservoir with a flue
in the rear side in combination with a portable base pan or flue
57, 58 shell, and also in making, using, and vending reservoir cooking
stoves containing the combination with a three-flue stove having a
damper arranged as described, of the portable base pan or flue shell, and
warming closet as charged in the said bill of complaint, and that the said
complainants are entitled to have a perpetual injunction restraining and
enjoining the said defendant the Excelsior Manufacturing Company of
St. Louis, its clerks, attorneys, agents, servants and workingmen, and all
claiming or holding under or through the said defendant, from making,
using, or vending, or in any manner disposing of reservoir cooking
59, 60 stoves, embracing the improvements described in the last aforesaid
letters patent, namely having a detachable base pan or flue
shell attached to the body at a point near the center of the back plate of
the stove by means of hooks cast on the base pan and pins on the stove
body or having a portable reservoir with a flue in the rear side in combination
with a portable base pan or flue shell, or containing the combination
with a three-flue stove, having a damper arranged as described of the portable
base pan or flue shell and warming closet.

And it is further ordered, adjudged, and decreed that this cause be referred
to Newton Crane, esquire, a master in chancery pro hac vice,
61, 62 to ascertain and report the number of various cooking stoves containing
the combination with the back plate of the cooking stove of
the reservoir arranged on a support about midway between the top and
bottom plates of the stove, and the air chamber between the stove back and
reservoir front open at the top and communicating with the air in the
room, or containing the combination with the stove and reservoir of the
small opening, the sheet flue under the entire bottom of the reservoir and
the small exit passage or pipe, or containing the detachable base pan or
flue shell attached to the body at a point near the center of the
63, 64 back plate of the stove by means of hooks cast on the base pan and
pins on the stove body, or the portable reservoir with flue in rear
side in combination with the portable base pan or flue shell, or containing
the combination with a three-flue stove, having a damper arranged as described
of the portable base pan or flue shell and warming closet made, and
also the number sold by the said defendant since the third day of June,
A. D. 1874, and the damages the complainants have sustained, or use and

profits the defendant has derived by reason of such infringement since the
time last aforesaid.
65, 66 And upon the coming in and confirmation of the said report that
said complainants have a decree and execution for the amount found
due them, and also for the costs in this suit to be taxed.

And afterwards, to wit, on December 24th, 1879, the following further proceedings were had of record in said cause, to wit:

ESEK BUSSEY ET AL., complainants,
vs.
THE EXCELSIOR MANUFACTURING CO., defendant.
} #1039.

Now, at this day, comes Newton Crane, esquire, master pro hac vice, and
files his report herein, and the defendant', by their solicitor, S. S. Boyd, es-
quire, likewise come and waive any and all exceptions to said report.
67, 68 Whereupon, on motion of said solicitor, said report is confirmed
subject to the right of the complainants to take exception thereto
within thirty days from the filing thereof, and the former decree herein is now
made final. It is further ordered that the defendants have a stay of the
injunction heretofore issued until the further order of this court upon
filing a good and sufficient bond in the sum of ten thousand dollars.

It is further ordered that a fee of one hundred dollars be taxed in favor
of Newton Crane, master pro hac vice, herein.
69, 70. Said report of said master is in words and figures following, to
wit:

In the United States circuit court for the eastern district of Missouri.

ESEK BUSSEY AND CHAS. A. McLEOD, complainants,
vs.
THE EXCELSIOR M'F'G. COMPANY OF ST. LOUIS, defendant.
} In equity. No. 1039.

To the honorable the judges of said court:

In this suit complainants filed a bill in equity to restrain defendant from
manufacturing and selling certain kinds of reservoir cooking stoves
containing improvements covered by complainants' letters patent
71, 72 numbered 3815, 142717, 142931, 142932, 142934, and 142935,
and praying for and accounting of such profits as defendant had or
might have made by its alleged infringement of their letters patent.

Defendant in its answer denied infringement of all patents herein claimed, except 142933 and 142934, and set up that these and all of the patents were void for want of novelty; whereupon issue was joined.

After taking of testimony patents numbered 142717, 142931, and
142932, and 142935 were withdrawn by complainants from the case upon the
assurance of defendant that it was not using and had not used in
73, 74 the manufacture of its stoves for some time past the improvements
covered by these patents.

Wherefore when the case came on for hearing before your honors the questions at issue were narrowed down to whether these patents claimed by complainants to art letters patent Nos. 3815, 142933, and 142934 were valid, and whether defendant infringed them. Concerning these three patents defendant denied that it used or had used the one numbered 3815, but admitted the use of Nos. 142933 and 142934, while it denied the validity of all the patents alike.

After a hearing of the case on these issues your honors ordered and ad-
judged that defendant does not infringe the letters patent of com-
75, 76 plainant No. 3815, and the bill was dismissed as to such patent;
that the letters patent Nos. 142933 and 142934 were good and
valid, and that defendant infringed the same, and it was referred to New-
ton Crane, a master in chancery pro hoc vice, to ascertain and report the
number of rese'voir cooking stoves containing the combination with the
back plate of the cooking stove, of the rese'voir arranged for a support
about midway between the top and bottom plates of the stove, and the air
chamber between the stove back and rese'voir front open at the top and
communicating with the air in the room, or containing the combi-
77, 78 nation with the stove and rese'voir of the small opening, the sheet
flue under the entire bottom of the rese'voir, and the small exit
passage or pipe; or containing the detachable base pan or flue shell, at-
tached to the body at a point near the centre of the back plate of the stove
by means of hooks cast on the base pan and pins on the stove body; or
the portable rese'voir with flue in the rear in combination with the porta-
ble base pan or flue shell; or containing the combination with a three-flue
stove, having a damper arranged as described, of the portable base
79, 80 pan or flue-shell and warming closet, made, and also the number
sold by the said defendant since the 3d day of June, A. D. 1874,
and the damage the complainants have sustained, or use and profits the
defendant has derived by reason of such infringement, since the time last
aforesaid.

And now I, Newton Crane, the said master in chancery pro hoc vice,
do respectfully report that I have proceeded to investigate the matter so
referred to me, and that pursuant to summons duly issued I have been
attended by the parties, complainant and defendant and their respect-
81, 82 ive counsel, and have heard and considered all proofs laid before
me.

Complainant offered in evidence a statement (hereto annexed and marked "Exhibit A") showing the number of low rese'voir stoves containing the Notion, and letters patent Nos. 142933 and 142934, made by defendant from the first of June, 1874, to the 29th of October, 1879.

Complainant' also offered in evidence a contract and license (hereto an-
nexed and marked "Exhibit B"), dated June the 3d, 1874, and signed by
the parties, complainants and defendant, by which, in consideration of cer-
tain alleged advantages therein set forth, defendant obtained by agree-
ing to pay to complainants a license fee of one dollar per stove
83, 84 the right to manufacture and sell cooking stoves containing wholly
or in part complainants' patents.

Complainants called Mr. Giles F. Filley and Mr. J. W. Bell to prove the number of low rese'voir stoves manufactured from June 1st, 1874, to October 29th, 1879, by the defendant company, and the amount of profit on said stoves. Complainants offered no other testimony and rested their case.

Defendant offered no evidence.

In summing *of* their case complainants claimed that the license and
agreement (Exhibit B) established a license or a fixed royalty, and
85, 86 that the royalty should be taken as the measure of damages, as the
number of stoves manufactured since June 3d, 1874, was proved
by the statement offered (Exhibit B); this number multiplied by the
royalty per stove is claimed as the sum of the damages.

Defendant submitted that although in its answer in joining issues originally in the case it had admitted an infringement of Nos. 142933 and
142934, *but* it is not nor precluded thereby from showing that it does
not in *fact* either of these patents, and that if it can make such to appear,
then it can be assessed in damages for two stoves only. Defendant also
denied that the license and agreement (Exhibit B) did not establish a
royalty.

87, 88 In view of these facts it becomes important to look closely into
the terms of this license and agreement, and the manner in which
it was treated by the parties to it. By this license complainants grant to
defendant the right to manufacture cooking stoves containing wholly or
partly certain improvements which are covered by no less than nine distinct letters patent, all of which are the property of complainants. By
this license also defendant agreed to make verified statements an'ually
of the stoves of this kind manufactured by them, and to pay a license fee
of one dollar upon every stove sold by them, with a rebate of fifty
89, 90 per centum for prompt payment at the time fixed for accounting.

The fifth and last clause of the license gave complainants the
right to revoke it if at any time defendant failed to make payments of license fees within thirty days after the time fixed for the settlements. By
an agreement attached to this license, complainants covenanted to hold defendant harmless in manufacturing the stoves containing their patents,
while defendant agreed to make no low rese'voir cooking stoves except under this license. A concluding clause gave to defendant the right to cancel the license by paying the fees due up to the date of cancellation. This
license was granted June 3d, 1874. To what extent defendant
91, 92 availed itself of the privelege of the license or complied with its
terms, there is nothing to show, except a letter written March 19th,
1875, by the president of defendant company remitting $500 to complainants, and announcing: "In the future we will consider your license of
the third of June, 1874, as revoked." (Testimony before the master, pp.
3 and 4.) This is the only payment ever made by defendant on account
of the license, which was henceforward treated as if it had never existed.

Under these circumstances it does not appear to me that a royalty
is here sufficiently established to justify making it a measure of
93, 94 damages, particularly in a case in equity. Even in action at law
the rule that sales or a royalty constitute the primary criterion of
damages can only be applied where there is shown to be a fixed and established price at which a license is granted. (Block v. Menson, 14 Blatch.,
268.) And in Seymour v. McCormack (16 Howard, 480) it is stated that
when the owner of a patent habitually sells licenses, the price of a license
may afford the proper measure of damages. So Burdell v. Drury (92
U. S., 716), it is held that a royalty established constitutes the primary and
true criterion of damages. Complainants failed to show not only
95, 96 that the royalty charged here was the fee habitually charged, but

there is a conspicuous absence of evidence to show that another license had ever been granted by complainants to any one. The attempt, therefore, to make this license fee a measure of damages fail, because, in my opinion, there is in the license a want of uniformity and certainty. It is also insufficient for another reason. The fee here charged was for the privilege to use nine patents, and although the context may be taken to imply that the licensor's terms were the same, whether the license used one or nine of
the improvements, it cannot fairly be claimed that the measure of
97, 98 damage is the same whether defendant infringed all nine or only
two of these patents. The license itself, as well as the agreement annexed to and made part of it, and the testimony regarding it, indicate that there were peculiar circumstances attending the granting of the license. If these circumstances were known some light might be obtained from them by which to marshal the value of these respective patents, but we are left in the dark regarding them. To treat all the patents as of equal value would be palpable erroneous. To try and apportion among the dif-
ferent patents the pecuniary value put upon them in the aggregate
99, 100 would be simply more or less successful guessing. There could
therefore be no criterion of damages for the infringement of these two patents Nos. 142933 and 142934 in this license even if it were admitted to be good in other respects.

Still further, the evidence is plain that the license was revoked by defendant—whether in a due and proper manner, might perhaps have been questioned at the time, although it is not disputed now. Complainants offered, as far as we can gather from the evidence, no objection to this action of defendant. They not only took no measures to keep defendant to
this agreement at the time, but they themselves have treated the
101, 102 license as of no effect by bringing this bill in equity against de-
fendant. How, then, can they rest their claims in the assessment of damages on an instrument which they have themselves treated as annulled, or, in other words, consider it obligatory upon one party and not upon the other?

Relying apparently solely upon the license fee as the measure of their damages, complainants made no effort to show what profit defendant made or ought to have made by reason of these improvements, beyond a few
interrogatories concerning the cost of making and the profit on the
103, 104 low-down rese'voir stoves put to Mr. Filley, who testified that he
knew nothing on the subject (see testimony before the master, pp. 5 and 6), and to Mr. Bell, who replied that he could not tell the cost or value of any stoves of the kind mentioned, or the profit on them, without having certain data (complainant's testimony before the master, pp. 10, 11, 12. It was not required to produce this data, and the enquiry ended there.

There is, therefore, nothing, in my opinion, to show the measure or the sum of the damages sustained by complainants by reason of the infringement by defendant of the two letters patent Nos. 142933 and
142934, and I do find and report that the said defendant should
105, 106 be decreed to pay the complainant the sum of one cent for dam-
ages herein.

I respectfully refer to the testimony taken before me, and hereunto annexed as making part of this my report. All of which is respectfully submitted.

St. Louis, Dec. 24th, 1879.

NEWTON CRANE,
Special Master in Chancery pro hac vice.

107, 108 In the United States circuit for the eastern district of Missouri.

ESEK BUSSEY ET AL.
vs.
THE EXCELSIOR M'F'G CO.

For plaintiff, C. J. Hunt, esq.; for defendants, S. S. Boyd, esq.

The above-entitled cause having been referred to Newton Crane, esq., the same came on for a hearing of testimony at his office, No. 305½ Olive street, October 30, 1879, when the following proceedings were had:

GILES F. FILLEY, being duly sworn on behalf of the plaintiff, testified as follows:

109, 110 Mr. Hunt offered in evidence a paper marked "Exhibit A," and asks Mr. Filley: Does this paper contain a statement of the number of stoves made under the patents of Nation and Little, No. 142933 and 142934, during the time mentioned in the paper?

A. This is what our books show to have been made.

1. Int. I see from this paper that your account for stoves sold between July 1 and December 31, 1874, amounts to 1,100 stoves. Was not the royalty for these stoves paid by you for that period of time?

A. I think they were. There was a royalty paid for one year.

111, 112 2. Int. Did you render Bussey & McLeod a statement of the number of stoves made and sold that year, 1874, containing those improvements on which you paid a royalty?

A. I am not quite certain. We rendered a statement, but I can't tell exactly how that statement was made..

3. Int. How much royalty did you pay them that year on those stoves?

A. I can't tell exactly without reference to our books or letters, but I think it was $500. The amount, whatever it was, was sent under a protest.

4. Int. Will you look at this paper (handing witness a paper marked "Exhibit B"), and state whether those are your signatures at the bottom of it?

113, 114 Mr. BOYD. I object to the introduction of this paper as incompetent.

A. Yes, sir; they are.

5. Int. Did you pay that $500 referred to to Messrs. Bussey & McLeod as royalty on 1,100 stoves you report here as being made from June 1 to December 31, 1874?

A. Yes; as near as I now recollect, I paid it on an agreement a year as royalty. I will produce a copy of the letter remitting it, if I can find it.

6. Int. Was not the agreement you mention in your last answer an agreement to pay a royalty for the use of these patent devices?

A. I think not; the letter will show.

115, 116 7. Int. I mean, was not that $500 sent under the clause in this agreement in Exhibit B, which reads as follows: "In case during any year ending December 31, in which said stoves are made and sold, said fifty per cent. of the license fees upon said patented stoves sold should not amount to $500, then the parties of the second part covenant to pay said parties of the first part $500 in lieu of said license for said twelve month'?"

(Objected to as immaterial.)

A. I cannot tell without referring to that letter.

117, 118 (Letter referred to here produced and read by Mr. Boyd, as follows:)

ST. LOUIS, *March* 19, 1875.

MESSRS. BUSSEY, MCLEOD & CO.:

DEAR SIRS: Yours of the 9th came duly to hand. We disavow of any intention of doing a wrong or doing a mean act, but we propose to do what is right, under all and every circumstance.

You will please bear in mind that your patent, or your alleged patents, are undergoing a test in the courts which may determine whether or not you have any vested rights in them; but until these questions
119, 120 are settled you cannot complain if parties take exceptions to your
demands for royalties. Upon that is a doubtful issue. In order, however, not even to seem to act towards you unfairly, we send you a draft for $500, which is a greater amount than the royalty would be on the stoves we have sold, but by so doing we do not admit you have any legal title under your alleged patents, as we before stated. In the future we will consider your license of the 3d of June, 1874, as revoked.

Respectfully, yours,

G. F. FILLEY, *President.*

121, 122 8. Int. I find in this letter the following expression: "which is a greater amount than the royalty would be on the stoves we have sold." What did you mean by your expression, if you did not pay a royalty?

A. I mean the exhibit as here made is probably the number of stoves made between June and December, while the sales were of less number.

9. Int. What did you mean by the expression "than the royalty?"

A. That is, that the royalty would not have amounted to $500, while the agreement calls for a remittance of $500, whether we sold that amount of stoves or not.

123, 124 10. Int. How much was the royalty that you agreed to pay on each stove?

(Objected to as immaterial, as the paper will speak for itself.)

A. As near as I can recollect it was fifty cents, under the agreement.

11. Int. Was that agreement coupled with any agreement as to the time of payment?

A. I believe it was; the agreement will show.

12. Int. Was not the agreement that you should pay one dollar for every stove, and that you should have a deduction of fifty per cent. for prompt payment?

(Objected to by Mr. Boyd as immaterial.)

125, 126 A. I think not; it might have been in the paper, but that was not the understanding.

13. Int. Were the stoves that you made at that time on which you paid the royalty the same as the stoves of which you have returned the number in Exhibit A?

A. They were.

14. Int. What was the price of those stoves?

(Objected to as immaterial.)

A. I can't say; I dont know the price of a stove in the house.

15. Int. Can you tell how much profit you make on each of those stoves?

(Objected to same as before.)

127, 128 A. I can't tell.

16. Int. Who can tell the cost of those stoves, and what they were sold for?

A. I don't know that anybody can tell positively; the nearest would be Mr. Bell.

Cross-examination by Mr. BOYD:

1. X Int. Please look at the model now shown you and marked "Defendant's Exhibit O," and state how that corresponds with the construction of the stoves made by you during the time of this inquiry, so far as relates to the mode of attaching the base-pan and to the reservoir?

129, 130 A. It is the same as we have made the stoves we are making and have made them.

2. X Int. Now look at the model; will you state what is the purpose of this offset near the top of the reservoir?

A. One purpose is to close off the air space to prevent a circulation of air as between the reservoir and the back plate of the stove.

3. X Int. Did all your reservoirs have this offset, and, if not, what was the construction of them?

A. All had this offset excepting some stoves that were made the present year; and where the offset was not in the reservoir the top

131, 132 of the reservoir was so made, so as to accomplish the same purpose by coming down close fitting on the top of the stove.

4. X Int. What was your object in having that fit in the manner you have described?

A. The effect by closing off the air space is to produce a greater degree of heat in the reservoir.

5. X Int. Explain how.

A. By preventing a circulation of air through a space, the air being confined as between two spaces, being of course less circulation, consequently it produces a greater of heat; that is, the heat from the body of the stove is next to the reservoir.

133, 134 6. X Int. Will you state, in the construction of those stoves and the arrangement of your reservoir, whether you had any object in view, and what it was, in relation to the distance that there should be between the back plate of the stove and the back of the reservoir?

A. Our object was to bring the reservoir as near the back plate of the stove as we possibly could.

7. X Int. Have you had any experience in the manufacture of castings—moldings?

A. Yes, sir.

8. X Int. For how long a time?

A. Thirty years and over.

135, 136 9. X Int. Will you state how much nearer could the back
plate of the stove and the reservoir be brought by casting than
they are in the stove you have made?

A. They could be brought no nearer. The intention is to have them fit as near as two cast plates can fit.

10. X Int. Suppose between the back plate of the stoves and the reservoir there was a considerable space, so that the air could circulate between the two, what effect would that have upon the heating of the water in the reservoir through the side of the reservoir?

A. The effect would be pernicious to the amount of air pass-
137, 138 ing through them or circulating in that space. There would be
less heat in the reservoir.

11. X Int. In the construction of your stoves please state whether there was any other provision to prevent this circulation of air between the back plate of the stove and the back of the reservoir.

A. There was.

12. X Int. Does it appear upon the model you filed?

A. It does.

13. X Int. In what does it consi*ts*?

A. It consists in an upright projection, up and down here
139, 140 (indicating), made to fit the corresponding side of the reservoir,
for the very purpose of shutting off or preventing a circulation
of air through that space. They are made as fitting pieces, so that the
reservoir can fit up closely to them.

By Mr. Hunt. Will you look at the model of the reservoir reversed and tell us whether there is an air space there or not open to the air?

A. It is intended to cut off the air space with the reverse.

14. X Int. The model don't show it, does it?

A. Yes; it shows by those ribs here.

15. X Int. Does it do it?

A. Why, it is intended to do it, and does do it, just as effectu-
141, 142 ally as in the other way. You can't see through it, either, now
if you look to the right. The bevel on the reservoir is the same
on that side as on the other side. It is closed off as between the stove and
the reservoir.

16. X Int. But this model shows the second claim of the patent, does it not?

A. I don't know, sir; I don't know what the second claim is.

17. X Int. The second claim is "a combination with the stove A and
reservoir C of the small opening A"—which is this opening down here—"the
sheet flue C, under the entire bottom of the reservoir, and the small exit
passage or pipe, E, all substantially," &c. Does it cover that?
143, 144 (Objected to as calling upon the witness for a construction of
a written instrument, because before he can answer the question
he has got to construe the claim and determine what in law it covers.)

J. W. BELL, being duly sworn on the part of the plaintiff, testified as follows:

Direct examination by Mr. HUNT:

1. Int. Will you please look at Exhibit A, and state if it is a correct account of the stoves manufactured by the Excelsior Manufacturing Company containing the devices in patents number 142933 and 142934, issued to Nation and Little.

145, 146 A. I don't know anything about the device it shows. I only know this is a statement of low-reservoir stoves made and sold by our company as far as we can determine from the books.

2. Int. Can you tell what the cost of these stoves is, each one?

A. I could tell if I have a detailed statement of each kind of stoves sold.

3. Int. How much more do those stoves sell for than stoves without low-down reservoir, the same kind of a stove?

(Objected to as immaterial.)

A. Do I understand you to ask how much more a reservoir
147, 148 stove sells for than a square top without a reservoir?

4. Int. Yes.

A. That depends on the size of the stove, of course; without being able to state positively, I should think about $10 more as they run, from $6 to $14.

5. Int. Were those stoves, mentioned in this Exhibit A, all of the same size?

A. No, sir.

6. Int. What is the cost of putting the reservoir on?

A. The cost of the reservoir?

7. Int. Yes, sir.

(Objected to as immaterial.)

A. The actual cost at the factory, the way materials have been,
149, 150 a reservoir I guess would be about $6, including the enameling and outside men and materials, work, &c.

8. Int. That would leave a profit on a reservoir, would it not, of about $4?

A. No, sir, that don't include the base the reservoir sits on; that is just simply the reservoir itself, and the base it rests on weighs probably 30 pounds, but it is not included in that, and the difference in the price of the closet under that is also part of the price; I only give the cost of the reservoir itself.

9. Int. What is the cost of the base it sits on?

A. I can't give you the details, because I haven't these weights in my mind.

151, 152 10. Int. Can you give it pretty near?

A. No, there is a variation; the price I gave the reservoir is only medium size. They vary; about six different sizes of them; probably 20 different sizes of closets.

11. Int. What would be the profit on a reservoir and closet, and what is called a base-pan?

A. I can't answer the question without having the weights and cost of the molding, and because they are not figured in that way; the whole cost of the stove is figured in together.

12. Int. What is the profit on the whole stove?

(Same objection.)

153, 154 A. That depends on the size of the stove, and the quality of it, and the competition you have in the market of this particular stove.

13. Int. Have you had any competition in the market of this particular stove?

A. Yes, sir.

14. Int. Who are competing in the market with you in this stove?

A. There is a great many reservoir stoves.

15. Int. But not detachable reservoirs?

A. Yes, a great many. Buck makes a detachable reservoir; 'most everybody makes detachable reservoirs now

16. Int. A detachable base-pan?

155, 156 A. I think they are all mounted on the stove, and shipped; 'most everybody else does; but it can be taken off; it is a matter of choice with the manufacturer whether they shall be shipped that way or not.

17. Int. What is the profit ordinarily on stoves mentioned in the schedule A?

A. I can't undertake to answer that question, there are such a great variety of sizes; the last two or three years, I should say the profit was nil on anything in the way of cast iron.

18. Int. Will you look at Exhibit B, and state if you have seen that before?

A. I can't say whether I ever saw it before or not.

157, 158 19. Int. Do you know anything of the Excelsior Manufacturing Company paying $500 to Bussey and McLeod?

A. I know of it being done.

20. Int. What was it done for, or paid for?

A. I don't know that I can say positively that I knew what it was done for; I knew that $500 was paid them, and that a license was discussed, talked about; whether that is part of the consideration I can't say positi'ly.

23. Int. Can you tell when that $500 was paid?

A. No, sir, I cannot, without referring to our books.

22. Int. Would your letter-book show it?

A. It is customary when we make a remittance to keep a copy of the letter.

23. Int. This is in Mr. Filley's handwriting?

(Letter shown.)

159, 160 A. Yes, sir.

24. Int. Look at that letter and say if you know anything about this particular transaction.

A. No, sir; I don't know anything about this particular transaction; I don't know that I ever saw the letter before.

Cross-examination by Mr. Boyd:

1. X Int. Please look at the Model Exhibit O, and state how that corresponds, so far as the arrangement of the reservoir in relation to the back plate of the stove is concerned, with the construction of the stoves mentioned in Exhibit A.

A. It looks just like our stove.

2. X Int. Have you had any experience in molding?

161, 162 A. No, sir.

3. X Int. Do you know anything about the purpose of the offset in the reservoir, or was not your attention called to the mode of *of* th' manufacturing in the foundry?

A. No, sir; it was not.

By Mr. HUNT:

25. Int. Are the stoves mentioned in this statement, Complainant's Exhibit A, the same stove which you made in 1874, when you had the license from Bussey & McLeod—the construction?

A. I can't answer that question; I don't know; I have nothing to do with the foundry business; not there once in six months.

163, 164 26. Int. Don't you know about the construction of the stove?

A. No, sir; it is as much as I can do to sell them and get the money for them.

By the REFEREE:

I will ask you whether there are any other low-down reservoirs made than this covered by these patents?

A. I cannot answer, for the reason that there are so many low-reservoir stoves, so many different constructions, that I don't know what this patent covers; that is, whether they would come in contact with others
165, 166 that are different. Some particular arrangement every day. Every
manufacturer has some arrangement that differs in some respect to other manufacturers, and they are all changing from time to time. My id*ie* now is there are very few of the original Bussey's used, very few constructed under that arrangement, but I don't suppose any patents of recent issue.

Defendants close, and case submitted.

167, 168 And afterwards, to wit, on December 27, 1879, the following further proceedings were had of record:

ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
THE EXCELSIOR MANUFACTURING CO., DEFENDANTS. } 1039.

This day comes the defendant, by its solicitor, and presents to the court its bond to stay injunction herein, which is approved and ordered to be filed.

Which said bond is as follows, to wit:

169, 170 Know all men by these presents that we, the Excelsior Manufacturing Co. of St. Louis, Mo., as principal, and Giles F. Filley, as surety, are held and firmly bound unto Esek Bussey and Charles A. McLeod in the full and just sum of ten thousand dollars, to be paid to the said Esek Bussey and Charles A. McLeod, their heirs, executors, administrators, or assigns, to which payment well and truly to be made we bind ourselves, our heirs, executors, and administrators, jointly and severally, by these presents. Sealed with our seals and dated this 26' day of December, in the year of our Lord one thousand eight hundred and seventy-nine.

171, 172 Whereas lately, at the September term, A. D. 1879, of the circuit court of the United States for the eastern district of Missouri, in a suit depending in said court between said Bussey & McLeod, plaintiff', and Excelsior M'f'g Co., defendant, an injunction was rendered against the said defendant, and the said defendant having obtained a stay of said injunction from the said court in the aforesaid suit until the further order of said court:

Now, the condition of the above obligation is such that if the said defendant shall answer all damages and costs by reason of the stay 173, 174 of said injunction sustained by said plaintiff, then the above obligation to be void; else to remain in full force and virtue.

EXCELSIOR MANUFACTURING CO., [SEAL.]
By G. F. FILLEY, *President*. [SEAL.]

Sealed and delivered in presence of—
G. F. FILLEY. [SEAL.]
Approved by—

SAMUEL TREAT.

175, 176 And afterwards, to wit, on January 7, 1880, the following further proceedings were had of record.

ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
EXCELSIOR MANUFACTURING COMPANY, DEFENDANT. } 1039.

Now come the complainants, by their solicitors, and file exceptions to the report of the master pro hoc vice herein.

Said exceptions are as follows, to wit:

177, 178 In the United States circuit court for the eastern district of Missouri.

ESEK BUSSEY AND CHARLES A. MCLEOD
vs.
THE EXCELSIOR M'F'G COMPANY OF ST. LOUIS. } In equity. No. 1039.

Exceptions taken by the above-named complainants to the report of Newton Crane, special master in chancery pro hoc vice filed December 24, 1879, and to whom the above-entitled cause stands referred:

First. For that the said master, pro hoc vice, erred in not finding that the license *for* agreed to be paid by the defendant, as stipulated in the license granted by complainants, June 3 1874, to defendant, and surrendered by defendant after paying one year's royalty, was the 179, 180 true measure of the damages for each of the 14,972 stoves made by the defendant since the surrender of said license by the said defendant.

Second. For that the said master pro hoc vice erred in finding that the complainant did not show a license fee, paid as royalty, for the use of said Nation and Little patents No. 142933 and No. 142934, as a measure of damages for the stoves manufactured by the said defendant, and containing the inventions described and claimed in said letters patent.

Third. For that the said master pro hoc vice erred in not
181, 182 finding that the defendant had made 14,972 stoves containing
the inventions described and claimed in the said Nation and Little patents, No. 142933 and No. 142934, since the surrender of said license by the said defendant, or since the first day of January, 1875.

Fourth. For that the said master pro hoc vice erred in not finding that the five hundred dollars ($500) paid by the defendant, according to the terms of the license of June 3, 1874, for one thousand stoves, or less, was a license fee, and a proper measure of damages for every thousand or
part of a thousand stoves made by the defendant since said sur-
183, 184 render of said license, and containing the inventions described
and claimed in the said Nation and Little patents, No. 142933 and No. 142934, to wit, 14,972 stoves.

Fifth. For that the said master pro hoc vice erred in not finding that the license fee for one dollar per stove agreed to be paid by the defendant, in the license of June 3, 1874, on each and every stove manufactured by said defendant containing the inventions described and claimed in said Nation and Little patents, No. 142933 No. and 142934, or either of them, was the true measure of damages for each of such stoves made by the said
defendant since the date of the surrender of the said license of
185, 186 the said defendant, for, to wit, 14,972 stoves,

Sixth. For that the said master, pro hoc vice, erred in not finding that the damages of the complainants, arising out of the use, by the said defendant of the said Nation and Little patents, No. 142933 and No. 142934 since the surrender of said license, on the 1st day of January, 1875, amounted to the sum of fourteen thousand nine hundred and seventy-two dollars ($14,972), being one dollar for each of the 14,972 stoves admitted by defendant to have been made by it since said January 1, 1875, and containing the inventions described and claimed in said patents.

Seventh. For that the said master pro hoc vice erred in find-
187, 188 ing only nominal damages for the complainants.

SPRAGUE & HUNT,
Complainants' Solicitors & of Counsel.

189, 190 And afterwards, to wit, on February 5, 1880, the following further proceedings were had of record:

ESEK BUSSEY AND CHARLES A. McLEOD, complainants, *vs.* THE EXCELSIOR MANUFACTURING COMPANY of St. Louis, defendants.	1039.

This cause having been heretofore brought to a hearing upon the report of Newton Crane, esq., special master in chancery, pro hoc vice of the court, to whom it was referred to ascertain and report the number of stoves em-
bracing the principle of the complainants' inventions, as described
191, 192 and claimed in their letters patent, as mentioned and set forth in
the bill of complaint in this cause that had been made, and also

the number sold by the said defendant since the first day of January, A.
D. 1875, and the damages the complainant had sustained, and profits the
defendant The Excelsior Manufacturing Company had derived by reason
of the infringement of such patents since the time last aforesaid, which report
bears date the twenty-fourth day of December, in the year 1879, and
also upon exceptions taken to the said report on the part of the said complainants,
and the said cause having been argued by Messrs.
193, 194 Sprague & Hunt, the counsel for the complainants, and by Samuel
S. Boyd, esquire, the counsel for defendants, and due deliberation
had thereon:

It is ordered, adjudged, and decreed, and this court, by virtue of the
power and authority therein vested, doth hereby order, adjudge, and decree
that the said defendants do not infringe the said letters patent issued
to the said complainants Esek Bussey and Charles A McLeod for a new
and useful cooking stove, dated February 1st, A. D. 1870, and numbered
reissue No. 3815, nor the letters patent granted said Little &
195, 196 Nation on the 9th day of September, 1873, numbered 142717, and
on the 16th day of September, 1873, numbered 142932, for improvement
in reservoir cooking stoves, and that as to such patents the bill
is dismissed.

And it is further ordered, adjudged, and decreed, and this court, by virtue
of the power and authority therein vested, doth hereby order, adjudge,
and decree that the letters patent issued to the said David H. Nation and
Ezekiel C. Little for an improvement in reservoir cooking stoves, dated
September 16th, 1873, and numbered 142933, are good and valid letters
patent, and that the said complainants are the owners of
197, 198 said letters patent, and also that the said defendant has infringed
the said letters patent, by making, using, and vending reservoir
cooking stoves containing the combination with the back plate of a cooking
stove of a reservoir arranged on a support about midway between the
top and bottom plates of the stoves, and the air chamber between the stove
back and the reservoir f'ont open at the top and communicating with the
air in the room; and that the said defendant has also infringed the said
letters patent by making, using, and vending reservoir cooking
199, 200 stoves containing the combination with the stove and reservoir
of the small opening, the sheet flue under the entire bottom of
the reservoir, and the small exit passage or pipe, as charged in the said
bill of complaint.

And it is further ordered, adjudged, and decreed, and this court, by virtue
of the power and authority therein vested, doth hereby order, adjudge,
and decree that the said complainants are entitled to have a perpetual
injunction issued out of and under the seal of this court to restrain the
said defendant, its clerks, attorneys, agents, servants, and
201, 202 workm*an*, and all claiming or holding under or through the said
defendant, from making, using, or vending, or in any manner
disposing of reservoir cooking stoves containing the invention or discovery
described in said letters patent, namely, the combination with the back
plate of a cooking stove of a reservoir arranged on a support about midway
between the top and bottom plates of the stoves, and the air chamber
between the stove back and the reservoir front open at the top and communicatirg
with the air of the room, or from making, using, or

203, 204 vending reservoir cooking stoves containing the combination
with the stove and reservoir of the small opening, the sheet flue
under the entire bottom of the reservoir, and the small exit passage or
pipes.

And it is further ordered, adjudged, and decreed, and this court, by virtue
of the power and authority therein vested, doth hereby order, adjudge,
and decree that the letters patent issued to the said David H. Nation and
Ezekiel C. Little for an improvement in reservoir cooking stoves, dated
September 16th, A. D. 1873, and numbered 142934, are good
205, 206 and valid letters patent, and that the said complainants are the
owners of the last aforesaid letters patent; and also that the said
defendant has infringed the last aforesaid letters patent by making, using,
and vending reservoir cooking stoves having a detachable base pan or flew
shell attachment to the body at a point near the center of the back plate of
the stove by means of hooks cast on the base pan and pins on the stove
body, and also by making, using, and vending reservoir cooking stoves
having a portable reservoir, with a flue in the near side, in combination
207, 208 with a portable base pan or flue shell; and also in
making, using, and vending reservoir cooking stoves containing
the combination with a three flue stove, having a damper arranged as described,
of the portable base pan or flue shell and warming closet, as
charged in the said bill of complaint.

And it is further ordered, adjudged, and decreed, and this court, by virtue
and authority therein vested, doth hereby order, adjudge, and decree
that the said complainants are entitled to have a perpetual injunction
209, 210 restraining and enjoining the said defendant The Excelsior
Manufacturing Company of St. Louis, its clerks, attorneys,
agents, servants, and workmen, and all claiming or holding under or
through the said defendant, from making, using, or vending, or in any
manner of disposing of reservoir cooking stoves embracing the improvements
described in the last aforesaid letters patent, No. 142934, namely,
having a detachable base pan or flue-shell attached to the body at a point
near the center of the back plate of the stoves by means of hooks cast on
the base pan and pins on the stove body, or having a portable
211, 212 reservoir, with a flue in the rear side, in combination with a
portable base pan or flue shell, or containing the combination
with a three-flue stove having a damper, arranged as described, of the
portable base pan *of* flue shell and warming closet.

And it is further ordered, adjudged, and decreed, and this court, by virtue
of the power and authority therein vested, doth order, adjudge, and
decree that the report of the master, heretofore filed, be in all respects confirmed,
and that the said defendant pay to the said complainants
213, 214 the sum of one cent as damages for the infringement of their said
letters patent No. 142933 and No. 142934.

And it is further ordered, adjudged, and decreed that the entire costs to be taxed in this suit be divided, and that the said complainants to pay five-sevenths ($\frac{5}{7}$) of said costs, and that the said defendant pay two-sevenths ($\frac{2}{7}$) of said costs.

And thereupon the said defendant, by its solicitor, moves the court to grant and appeal from this decree to the Supreme Court of the United States.

Whereupon it is ordered that an appeal be allowed as prayed
215, 216 upon the defendant filing a bond herein in the sum of ten thousand dollars, with good and sufficient security, to be approved by one of the judges of this court.

217, 218 And afterwards, to wit, on February 11, 1880, the following further proceedings were had of record:

WEDNESDAY, *Feb'ua'y* 11, 1880.

ESEK BUSSEY ET AL., COMPLAINANT',
vs.
EXCELSIOR MANUFACTURING CO., DEFENDANTS. } 1039.

And now comes the complainants, by their solicitors, and pray an appeal
to the Supreme Court of the United States from so much of the decree in
this cause as relates to the said complainants' reissue patents No. 3815,
and its non-infringement by said defendant, and also to that part
219, 220 of said decree relating to the damages of said complainants, and
to the costs to be paid by the said parties to this cause.

And afterwards, to wit, on March 8, 1880, the following further proceedings were had of record:

E. K. BUSSEY ET AL., COMPLAINANTS,
vs.
THE EXCELSIOR MANUFACTURING CO., DEFENDANT. } 1039.

Now come the complainants, by their solicitors, and present to the court
an appeal bond in the sum of one thousand dollars; and also
221, 222 comes the defendant, by its solicitor, and presents to the court its
appeal bond in the sum of ten thousand dollars; which said
bonds by the court approved, and order' to be filed and made part of
the record herein; which said appeals bond' of plaintiff and defendant are
as follows, to wit:

223, 224 Know all men by these presents that we, Esek Bussey and
Charles A. McLeod, as principals, and John O. Mirriam, as security, of the city of Troy, State of New York, are held and firmly bound
unto the Excelsior Manufacturing Company of St. Louis, of the city of
St. Louis and State of Missouri, in the sum of one thousand dollars, lawful money of the United States of America, to be paid to the said Excelsior Manufacturing Company of St. Louis, or to its certain attorney, heirs,
executors, administrators, or assigns; to which payment well and
225, 226 truly to be made we bind ourselves, our heirs, executors, and administrators, and each and every of them, firmly by these
presents. Sealed with our seals; dated the eighteenth day of February, one
thousand eight hundred and eighty.

The condition of this obligation is such that if the said Esek Bussey and Charles A. McLeod shall well and truly pay or cause to be paid all the costs which may be taxed against them in a certain suit which they have

appealed from the circuit court of the United States for the eastern district
of Missouri to the Supreme Court of the United States, wherein the said
Esek Bussey and Charles A. McLeod were the complainants
227, 228 and the said Excelsior Manufacturing Company of St. Louis
were defendants, then these presents shall be null and void; other-
wise to remain in full force and virtue.

ESEK BUSSEY. [L. S.]
CHAS. A. McLEOD. [L. S.]
JOHN O. MIRRIAM. [L. S.]

Approved.

SAMUEL TREAT, *Judge.*

229, 230 Know all men by these presents that we, The Excelsior Manu-
facturing Company, as principal, and Giles F. Filly, as security,
of St. Louis, Mo., are held and firmly bound unto Esek Bussey and Charles
A. McLeod in the full and just sum of ten thousand dollars, to be paid
to the said Esek Bussey and Charles A. McLeod, their heirs, executors,
administrators, or assigns; to which payment well and truly to be made we
bind ourselves, our heirs, executors, and administrators, jointly and sever-
ally, by these presents. Sealed with our seals and dated this 16th
231, 232 day of February, in the year of our Lord one thousand eight
hundred and eighty.

Whereas lately at the September term, 1879, of the circuit court of the
United States for the eastern district of Missouri, in a suit depending in
said court between Esek Bussey and Charles A. McLeod, plaintiff, and
Excelsior Manufacturing Company, defendant, a decree was rendered
against the said defendant, and the said defendant having obtained and
appeal of the said court to reverse the decree in the aforesaid suit
233, 234 and a citation directed to the said citing and admonishing to
be and appear at a Supreme Court of the United States to be
holden at Washington the second Monday of next:

Now, the condition of the above obligation is such that if the said Excelsior Manufacturing Company shall prosecute said appeal to effect and answer all damages and costs if it fail to make good the appeal, then the above obligation to be void; else to remain in full force and virtue.

EXCELSIOR MANUFACTURING CO., [SEAL.]
By G. F. FILLEY, *President.* [SEAL.]

Sealed and delivered in presence of—
G. F. FILLY. [SEAL.]

Approved by—

SAMUEL TREAT, *Judge.*

235, 236 September term, A. D. 1879.

ESEK BUSSEY, COMPLAINANT,
vs.
EXCELSIOR MAN'F'G CO., DEFENDANT. } Patent.

Sprague & Hunt, solicitors for complainant; S. S. Boyd, esquire, solicitor for def't.

Oral remarks of Treat, J., on exceptions to master's report.

. Plaintiff relied for the measure of damages upon a rescinded contract,
wherein the defendant agreed that any or all of the several
237, 238 patents named therein were used by the defendant one dollar
royalty for each stove used should be paid. There was no other evidence before the master. Now as said contract had no longer existence, and the court held that but two of the several patents were infringed, it became necessary to ascertain in some intelligent manner the damages sustained by the plaintiff for the use thereof. No evidence on that subject
was offered; therefore the master reported nominal damages.
239, 240 The contention is that he should have gone back to the rescinded contract and applied the terms thereof to the condition of affairs after such contract ceased to be obligatory.

The court holds otherwise. Exceptions overruled; report confirmed; costs divided as stated.

241 The circuit court of the United States for the eastern district of Missouri.

ESEK BUSSEY AND CHARLES A. LCLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY of St. Louis, defendants.
} In equity.

Testimony taken on behalf of the complainants for a final hearing under Rule 67 of the Supreme Court in equity, as amended, before Henry S. Sprague, esq., notary public in and for the county of Wayne and State of Michigan.

Present: Chas. J. Hunt, esq., of counsel for complainants; S. S. Boyd, esq., of counsel for defendants.

Counsel for complainants offer in evidence reissued letters patent to Esek Bussey and Charles A. McLeod, for a cooking stove, dated February 1, 1870, numbered 3815, marked "Complainants' Exhibit A."

Also offer in evidence the patent to David H. Nation, for a reservoir cooking stove, dated September 8th, 1873, numbered 142717, marked
"Complainants' Exhibit B."
242 Also, the patent to David H. Nation and Ezekiel C. Little, for
a reservoir cooking stove, dated September 16th, 1873, and numbered 142932 marked "Complainants' Exhibit C."

Also, the patent to David H. Nation and Ezekiel C. Little, for a reservoir cooking stove, dated September 16th, 1873, and numbered 142933, marked "Complainants' Exhibit D."

Also, the patent to David H. Nation and Ezekiel C. Little, for a reservoir cooking stove, dated September 16, 1873, numbered 142934, marked "Complainants' Exhibit E."

The complainants withdraw all claim under letters patent to David H. Nation and Ezekiel C. Little, for reservoir cooking stoves, dated September 16th, 1863, and numbered 142931.

And also for letter' patent, same parties, dated September 16th, 1873, and numbered 142935.

Complainants offer in evidence an assignment from David H. Nation and Ezekiel C. Little to Esek Bussey and Charles A. McLeod, marked "Complainants' Exhibit F."

Complainants also offer in evidence a stove, which is admitted by the defendants to be a correct representation of the stoves manufactured by them at the time of the commencement of this suit, with the exception that the mode of attaching the covers to the reservoir is different, marked "Complainants' Exnibit G."

WILLIAM E. HAGAN, a witness called in behalf of complainants, being duly sworn, testifies as follows:

Examined by CHAS. J. HUNT, Esq.:

Q. 1. What is your name, age, residence, and occupation?

Ans. My name is William E. Hagan; I am 51 years old; I reside at Troy, N. Y.; and my occupation is that of a mechanical and chemical expert.

243 Q. 2. What has been your experience as a mechanical and chemical expert, and more particularly as to inventions and stoves?

A. During the last fifteen years of my life I have lived in a locality where the larger portion of the stoves used in the United States are made, and during which time I have frequently been consulted by inventors and manufacturers with reference to inventions in stoves. I have also been employed as an expert to give evidence where inventions in stoves and furnaces were a matter of controversy, and in a large majority of such cases occurring in the United States during the last fifteen years, and I am now employed and engaged to make examination and explain the same in court in a majority of cases now pending in the United States in which inventions in stoves are a matter of litigation.

Q. 3. You will look at the patent to Esek Bussey and Charles A. McLeod for a cooking stove, reissue number 3815, marked "Complainants' Exhibit A," and state if you have read the same, and if you understand it.

Ans. I have read the patent named in the question, and believe I understand it.

Q. 4. You will look upon Complainants' Exhibit G and state what devices you find in said stove, if any, which are covered by the claims of that patent.

A. I have examined the stove and find it to be a three-flue stove, with a reservoir arranged at the rear, having a horizontal flue beneath the bottom of the reservoir, and connecting with a rear enclosed vertical flue. I find this to be really the subject-matter of the first claim of the patent, in which the first claim occurs, as follows: "A diving-flue cook stove with the exit flue so constructed as to enclose on the sides and bottom the culinary boiler or hot-water reservoir B." The subject-matter of this claim is shown in
244 Fgure 4 of the drawings attached to the patent named with the reservoir shown at B, and the flue beneath the reservoir connecting with the exit, designated at E, the ascending portion of the flue being shown at E. I also find this stove to be a diving-flue cook stove, having an exit flue constructed across the bottom, and up the rear up-

right side of the culinary boiler or hot-water reservoir as is made the subject-matter of the second clause of the claim of the patent named in the question. I also find, on examining the stove exhibit, that it is constructed with an exit passage, arranged to connect with the flue beneath the oven, and an exit flue by means of an opening formed below the top of the oven, and this is arranged in combination with an uncased reservoir which is attached to the stove, and placed above a horizontal exit passage, so that the gases of combustion in passing through the exit flue will infringe upon or come in direct contact with the reservoir and as made the subject of the third clause of the claim of the patent made the subject of inquiry.

I further find, on examination of the stove named, that it has an exit flue passage, constructed at the rear, and below the top of the oven, which is combined with an uncased reservoir, which is attached to the rear of the stove with its bottom below the top of the oven, and is so arranged that the gages of combustion will come in contact with and heat the reservoir, when a direct draft from the fire-box to the smoke-pipe is employed in the stove. All of which is made the subject-matter of the fourth clause of the claim of the Bussey reissue named in the interrogatory.

Q. 5. You will look upon patent of David H. Nation and Ezekiel C. Little, No. 142932, and state whether you have examined the patent or not, and if you understand the same.

A. I have examined the patent and believe that I understand its purport and scope.

245 Q. 6. You will look upon Complainants' Exhibit G, and state whether you find therein any devices described and claimed in this patent or not, and describe the same if any there be.

A. I find the patent named in the question describes and illustrates "a base pan, *a*, extended rearward from the back plate, at a point about midway between the top and bottom plate, said base pan being provided with a broad flue communicating with the central stove flue and delivering the products of combustion to the exit pipe." I find that the stove named in the question (Exhibit G) does contain such a base pan extended rearward and arranged as described in the quotation that I have made from the patent.

On examining the claim of the patent I find it to consist as follows: "The combination of a cooking stove of the base pan C, extended rearward from a point about midway between the top and bottom plates of the stove, containing a broad flue and sustaining the reservoir D and exit flue, substantially as set forth." The exit flue E passes through the reservoir or is enclosed within it, in the same manner as occurs in the stove Exhibit G; the flue E also connects with a horizontal flue beneath the reservoir which opens into the center flue of the stove by means of an aperture, in the same manner as is described and illustrated in the patent. I therefore answer that I do find that the subject-matter of the claim of the patent named in the question to exist in the stove Exhibit G, and for the reasons that I have given.

Cross-examined by SAMUEL S. BOYD, Esq., of counsel for defendants:

Q. 7. You have stated that you find in stove Exhibit G the
246 construction set forth in the first claim of reissue 3815. Please

state how in said exhibit the flue beneath the bottom of the reservoir compares in size with the bottom of the reservoir, whether it extends so as to cover entirely such bottom.

A. It is spread out or expanded between the ingress opening and egress opening beneath the reservoir, so as to pass under the whole bottom of the reservoir. In comparison with the flue named in the reissue, beneath the reservoir as between the points of ingress and egress, the other is much larger.

Q. 8. Then I understand that, in your opinion, said patent describes and said claim is intended to cover a sheet flue expanded so as to entirely cover the bottom of the reservoir. Am I right?

A. Not necessarily. I do not wish to be understood as stating that any improvement or addition in capacity of the flue, or by which the capacity of the flue is enlarged, would necessarily be included in the claim of the reissue; while the stove named in the question has been improved to increase the capacity of the flue beneath the reservoir in the stove Exhibit G it also has direct communication to utilize heat in the same manner as that shown in the reissue by the location of the ingress and egress aperture, which remain the same in both the stove and the patent.

Q. 9. In your opinion, does this patent describe and does this claim cover and include a flue beneath the reservoir, which is expanded corresponding to the bottom of the reservoir whenever such flue is connected with a smaller flue entering the stove and a smaller exit flue for the final escape of the products of combustion?

A. I do not think it would include all special improvements of its application, but it would still include the general idea of an exit flue, so
constructed as to enclose on the sides and bottom a culinary boiler.
247 I should merely regard, in the light of invention, the enlargement
of the flue beneath the reservoir between the common points of ingress and egress to be merely one of degree in which the enlargement would constitute an improvement upon the other. And while the device Exhibit G does contain the original idea, it does contain an exit flue so constructed as to enclose on the sides and bottom a culinary boiler.

Q. 10. Then, in your opinion, the enlargement of the flue beneath the reservoir constitute an improvement upon the construction shown in this reissue?

A. I do, in the sense in which an improvement embodies the original, and increases the capacity of the device to perform its functions, in measure of degree.

Q. 11. You mean, do you, that the enlargement of the flue beneath the reservoir does increase the capacity of such flue for the purpose for which it was intended, and is in fact a practical improvement upon the construction shown in the reissue?

A. It is in the fact, as I have before stated, that while using the heat in the same manner to heat the bottom of a reservoir, it also has the added capacity which the greater area gives it, and in this light, using the original and added means, the added area constitutes the improvement.

Q. 12. You say, that the construction shown in Exhibit G., through an improvement upon that shown in first claim of Bussey, reissue 3815, still embodies within it the construction shown and claimed in such reissue; what would be your opinion in regard to the converse of that proposition, supposing the construction shown in Exhibit G were earlier in date; would the construction shown in the Bussey reissue constitute any improvement thereof?

(Objected to as improper subject for cross-examination.)

248 A. Assuming the construction of Exhibit G to be the oldest one, and the later one the Exhibit Bussey Reissue, it would certainly include the latter, and if heating part of the reservoir bottom were a better arrangement of parts functionally considered, than heating the whole of it, the latter would be an improvement.

Q. 13. By the phrase, "A better arrangement of parts functionally considered," what do you mean; please explain, applying your explanation to said reissue and said Exhibit G?

A. It relates to the term improvement, applied to the question of degree or extent, to which function is to be made available.

Q. 14. The function of this flue beneath a reservoir is twofold; one, to furnish a connection between the exit pipe and the stove flue, and the other, to furnish a means of heating a reservoir above such flue; now, taking into consideration these functions, in what particular would the construction (under the hypothesis mentioned in interrogatory 12), shown in Bussey reissue be an improvement upon the construction shown in Exhibit G?

A. Inferentially the function of connecting the stove flue with the exit flue, was considered by me when answering the question 12 and with this addition of explanation I answer as before.

Q. 15. Taking into consideration the first function of this flue, in what respect would such construction be an improvement?

A. Answering under the connected assumption there would be a more direct passage for all the products of combustion to the exit in the one than in the other.

Q. 16. That is, the improvement would relate simply to the draft of the stove, would it not?

A. In regard to the particular function inquired about, it would, and its direction.

249 Q. 17. Then so far as the matter of heating the reservoir is concerned, practically, there is but one function to this flue, the other function relating to the draft of the stove; is it not so?

A. It is.

Q. 18. Now, taking into consideration the only function which this flue has, so far as the reservoir is concerned, please state what improvement (under the hypothesis already assumed) the construction shown in the Bussey reissue would be.

A. Under the assumed conditions it might constitute an improvement, that while it might heat a part of the reservoir in the same way and in the same manner, if it was desirable to not heat so much of the reservoir by means of a horizontal flue beneath the whole of it would be an improvement to heat a part of it for that purpose in the same manner, and to a less degree than if the whole surface of the reservoir bottom was heated.

Q. 19. When you use the term "improvement" in the last answer, do you mean thereby patentable improvement, one that necessarily requires the exercise of invention, or do you mean merely structural improvement, such as is within the province of mechanical skill?

A. I mean patentable improvement, and in explanation of what I mean

I would state that very small deviations in the arrangement of structural parts in stoves sometimes make all the difference between an operative and an inoperative device, and, particularly if the object sought to be accomplished is a specific one, sometimes it occurs in this field of invention that small digression from pre-existing structures produce functions which the articles before the deviations did not have in the same degree. It is a well-known fact that reservoirs, as arranged upon stoves, for instance, designed to furnish warm water, are more particularly designed to avoid
250 boiling the contents; now if a horizontal flue beneath the bottom
of a reservoir, and a rear vertical exit flue, did boil the water, and a manufacturer desired to avoid that condition in the reservoir, and still desired to keep the water-warmer hot, he could produce the result by reducing the flue beneath the bottom of the reservoir by construction, and this construction would constitute an improvement upon the other assumed older means, though subordinate to it, and as such an improvement would constitute invention.

Q. 20. Then, in your opinion, where a person has a reservoir upon a stove with a flue beneath it, which he finds causes the water to boil too rapidly, there would be invention in simply making that flue smaller, and thereby cause the water to boil less rapidly, whether that diminution in size of flue was made by lessening its transverse or longitudinal dimensions?

A. There might be invention in such an alteration, as I have before stated, in the manner of modifying or reducing the capacity of a device which performed a similar function in a different degree; and to illustrate what I mean, that it may appear clear, and under what conditions small deviations may constitute invention or improvement upon the parts performing the same function, the well-known curved oven-plate in use in modern cook stoves is an example. In this illustration a former construction had been used which bounded an obtuse angle, and the mere changing of this form to an ogee line created an invention that was generally recognized throughout the country by stove manufacturers, and in the present case the improvement would not consist in the mere act of reducing the vertical or transverse boundaries of the flue, but in the manner of reducing it by construction.

251 Q. 21. Comparing the two constructions, concerning which you have been speaking, is not the degree of invention exhibited in the one as compared with the other of such a character as to render it necessary, in order to support your assertion of there being a patentable improvement, that this construction should be very specially limited to its precise mechanical details?

A. I think it should be limited to a reasonable interpretation of what would be an equivalent of its construction, under the assumption made that the Exhibit G is the older construction.

Q. 22. Do you not find that the Bussey reissue shows and describes in the flue E E′ a rearward extension, corresponding in size as to its width with the central diving flue of the stove, or with the central rear flue?

A. It is so shown and described.

Q. 23. Does Exhibit G present such construction?

A. It has not the same identical construction, from the fact that the flue is expanded so as to be larger than the ingress and egress flues, as I have before stated.

Q. 24. Do you not find that this reissue shows and describes a stove with a reservoir so combined therewith that said reservoir shall form a portion of the back plate of the stove, so that the products of combustion, when passing through the diving flues, and also the central rear flue of the stove, shall come in direct contact with such side of said reservoir?

A. I do not find that it is so arranged that the products of combustion shall come in direct contact with the sides of said reservoir; for there is arranged to be placed between the front of the reservoir, and forming the rear vertical wall of the flues named, a shield plate which would prevent the products of combustion passing up and down these flues from coming in direct contact with the reservoir wall; this plate is indicated, in a vertical position, by the letter *w–w* in the Figures 4 and 6 of the Bussey reissue.

252 Q. 25. Does not the Bussey reissue show and describe such a combination of a cooking stove and a reservoir that the inner side of the reservoir will form a part of the lateral rear casing of the rear end vertical flues of said stove, and said reservoir will be heated by direct contact with the products of combustion as they pass up and down said flues?

A. I have no doubt that, as shown, the reservoir wall forms a portion of the rear vertical end plate of said stove, "and that the front of the boiler is attached to the rear of said flues, in the manner shown and described in my reissued patent of July 24th, 1866." It also (the patent) states, * * * "it has been ascertained by experience that, when, during the use of the oven for baking purposes, a large quantity of cold water suddenly poured into the reservoir, and there is nothing between the front of the boiler and gases of combustion passing through the rear vertical end flues, the heat of said gases will be so much absorbed by the reservoir as to sensibly cool the oven and interfere with the process of baking." To obviate this I employ the thin plate *w–w*, "placed between the front of the reservoir and said rear end vertical flues, and which, when it allows sufficient heat to pass through to aid in heating the boiler, protects the front thereof from the direct impact of the gases of combustion, and preserves an equal heat in the oven." Thus it will be seen that as described when the plate *w w* is employed, the gases passing to the exit through the vertical flues do not come in direct contact with the reservoir wall, although it is constructed to form a portion of the vertical rear end plate of the stove. If the shield plate *w w* were removed, then, as a condition of construction, I would answer the question affirmatively.

Q. 26. Do you find this shield plate *w w* in Exhibit G?

253 A. I find a vertical plate performing the same office that the shield plate does when in position in the Bussey reissue.

Q. 27. Does not the patent of Bussey describe a plate made thinner than the ordinary stove plate, and one which has no relation to the stove, and performs no other office than that of a shield?

A. He employs the following term of construction in regard to it, "I employ the thin plate *w w*;" it is shown in the drawings as being thinner than the reservoir wall and the other plates of the stove. I cannot answer affirmatively the latter part of the question fully, from the fact, while it does furnish a shield plate and a thin wall for the flues at the point where it is placed, and prevents the passing currents from coming in direct contact with the wall, it also furnishes a means for heating the reservoir by conduction, while also acting as a shield plate to prevent direct contact with the reservoir of the passing heat.

Q. 28. Does the Bussey patent suggest or in any wise indicate any construction by which the back plate of the stove may be interposed between the reservoir and the products of combustion in the vertical rear flues?

A. It does not.

Q. 29. Does not the Bussey patent show a reservoir having a portion of its side within the vertical flues of the stove, and one which is supported from the top plate of such stove?

A. It does; a small portion of the reservoir is extended inwardly above the line of the lower back of the stove.

Q. 30. Do you find such construction and arrangement in Exhibit G?

254 A. I do not, so far the reservoir is shown extending into the flue space. The reservoir is shown in Exhibit G as resting upon the flue pan formed below it.

Q. 31. Does not the Bussey patent show a reservoir which is entirely separate from and forms no part of the vertical or horizontal exit flue, with which its inoperation is associated?

A. It forms the upper wall of the horizontal flue enclosure E and the side wall of the vertical exit flue E′, as indicated at *g h*, Fig. 4 of the Bussey reissue.

Q. 32. Does not the Bussey reissue show and describe a reservoir which is an entirety, when separated and removed from the horizontal and vertical flues with which it is connected when in operation?

A. It is not shown in the patent as isolated from the stove, as it forms the top and side of the bottom and rear vertical exit flues, but that it could be removed from the stove, and, when removed, would, I have no doubt, constitute an entirety.

Q. 33. Does not Figure 4 of the Bussey reissue clearly show that the horizontal and vertical flue extension E E′ form no part of the reservoir B, and that said reservoir is complete in itself?

A. Taken by itself in vertical section, it might be so understood; but taken in connection with Figure 6, in which the flue is shown as formed on the back of the reservoir, the rear ascending flue E′ does form a part of the reservoir.

Q. 35. Do you state from your knowledge as an expert, and with the experience you say you have had in examining patents and drawings relating to stoves, that Figure 6 of the Bussey reissue shows that the rear flue E′ forms a part of the reservoir B?

A. It is shown as attached and in lines of continuity in the illustration in Fig. 6, in horizontal section, and also as so arranged in Figure 2, and I am of the opinion that it does so represent it.

255 Q. 36. Please state how draughtsmen, when they intend to show that two adjoining sectional lines are not continuous, indicate it upon the drawing.

A. Sometimes they do not indicate it at all; in parts of this drawing such divisions are not indicated. It is usually done by a dividing line, where it is designed to show that parts attach or join. And in making the deduction that I did, and where I used the word "continuity," I did it in connection with the illustration, Figure 2 and Figure 3, that the continuity of line shown in Figure 6 represent the rear vertical flue E as attached to the reservoir.

Q. 37. In your statement that you found in Exhibit G the construction claimed in the first clause of the claim of reissue 3845, what, in your opinion, of the device shown in the Bussey reissue were included in said claim?

A. An exit flue at the bottom and rear, enclosed on the side and bottom of the reservoir, and so arranged to be closed by the reservoir at that point.

Q. 38. Did you think that it was necessary that the flue under the bottom of the reservoir should bear any particular relation as to size to such bottom of the reservoir?

A. I did not further than that inferentially it should meet the description illustrated and described in the patent.

Q. 39. "To meet the description illustrated and described in the patent" such flue must be less in size than the bottom of the reservoir, must it not?

A. It is so shown

Q. 40. What elements did you consider as included in the second claim of said reissue when you said that you found the same in Exhibit G?

256 A. The second claim I regard as embodying the same as the first, with the exception that the word "sides," which in the first claim would include the heating of the reservoir by the vertical flue passage at the back, as well as by conduction at the front through the plate, while in the second claim it would be made a subcombination of the former by heating only one side and the bottom.

Q. 41. Then your answer to question 37, that said first claim included only "an exit flue at the bottom and rear enclosed on the bottom on side of the reservoir," was erroneous in omitting the vertical flue by which the front side of the reservoir was heated?

A. The question named having been read to me at my request, I desire to correct it as appearing, using the term "sides" instead of "side," which I thought I did say, and with that so connected as appearing in the record. I did not make the omission requiring answer in the last question.

Q. 42. Have not you omitted from said first claim an essential element, to wit, the shield plate?

A. I think not. I have not omitted it in the connection asked, for I have stated that I considered the end wall of the stove Exhibit G to perform the office of the shield plate.

Q. 43. In determining whether said Exhibit G was found in the first claim of said reissue, did you or not consider it of any importance whether the shield plate were included in the elements of that claim; in other words, would you find in Exhibit G the construction shown in the first claim of the Bussey reissue, provided the shield plate were omitted therefrom?

A. I do not think that the reservoir in Exhibit G and in the Bussey exhibit would be heated in the same manner if the shield plate were removed from the latter, although they would both be heated on rear side in the same manner, but in the one at the front it would be

257 heated by conduction through the end plate, and the other by direct contact from the passing products of combustion.

Q. 44. My question was whether, under the conditions named, Exhibit G and the construction claimed in the first claim of the Bussey reissue would be the same?

A. I think they would not, assuming the shield plate to be removed, and so far as relates to the first claim.

Q. 45. Then the only conditions under which, in your opinion, Exhibit G would be the same in construction as the first claim of the Bussey reissue, would be when the shield plate forms an element of said claim, would it?

A. Inferentially it would.

Q. 46. Necessarily, must it not?

A. I think it would, meaning by the term shield plate that, or some equivalent for it, through which that side of the reservoir near it could be heated in the same manner.

Q. 47. In determining whether a device were the equivalent of such shield plate, would the effect that the descending products of combustion had upon the water be of any importance?

A. The measure of effect would be important, considered in relation to the general result produced; and the manner of producing the effect would determine the question of equivalent conditions producing it; for instance, the stove plate could be made thinner at that point, and so as to take the same place in that respect as the shield plate shown in Bussey reissue, and thin enough to produce the same measure of conduction so as to heat the side of the reservoir nearest which it is placed in the same degree.

258 Q. 48. Does not the Bussey reissue show the shield plate, and also that side of the reservoir which is heated by conduction through said plate, as entirely within the flue space of the stove?

A. It is placed there, as shown in the drawings, in about as close proximity to the reservoir wall as it can be shown in the drawing and designated, one of the sides being in the current to receive heat, and the other side close up to the reservoir wall. So far as thus being placed in the flue space is concerned, the plate is so located—one of its sides being in the current and the other out of it.

Q. 49. Is not the purpose of having the shield plate "close up to the reservoir wall" to prevent there being any air space between said plate and said reservoir wall which would diminish the effect of the heat conducted through said shield plate?

A. That undoubtedly is one of the objects, although, as small space is shown there as between the plate and reservoir, it would not act so well if further removed, and at the same time it would cut off and reduce the usual flue areas if placed too far from the reservoir.

Q. 50. Suppose the reservoir B in Bussey's reissue were entirely removed from the flue space, and in lieu of the shield plate said stove had the ordinary back plate, and that between said back plate and the reservoir there were an air space opening at the sides and the top, would you deem such construction to be covered by said first claim of Bussey's reissue?

A. I think not, as I understand the question.

Q. 51. What effect do you give to the phrase "constructed across," in the second claim of Bussey's reissue, either alone or as compared with the phrase "so constructed as to enclose?"

259 A. I consider the term "across" to refer from front to rear as regards the direction of the flue; the term "constructed as to enclose," that the bottom of the reservoir shall enclose the top of the horizontal flue beneath the same, and the side of it the rear vertical flue back of it.

Q. 52. Do you mean that both phrases describe the same construction?

A. I think they do relate to the same construction.

Q. 53. When the flue forms a chamber beneath the reservoir, can the exit flue properly be said to be constructed across the bottom of the reservoir; or does it not refer to a construction wherein the exit flue passes, without changing its dimensions as to breadth, under the bottom of the reservoir?

A. I do not find any other suggestion in the patent that would change the meaning of the term "across" if the flue were enlarged beneath the reservoir enough to form a chamber, with the ingress and egress openings arranged opposite to each other, and the connection between them for flue purposes being shorter than the longer lines of the chamber, the term "across" would apply to the chamber just as much as it would to a contracted flue, for it would be a direction bounded by its smaller diameter.

Q. 54. Does not the Bussey reissue describe and the drawings clearly show an exit flue extended without change in width under the reservoir?

A. It does.

Further taking of testimony adjourned till Thursday morning at 9 o'clock, April 4th, 1878.

Met pursuant to adjournment. Present as before.

Q. 55. In determining that you found in Exhibit G the con-
260 struction described in the 3d claim of Bussey's reissue, which of
the elements shown in said reissue did you consider as included in
said claim.

A. I found Exhibit G to be a diving flue cook stove, having a horizontal exit passage, F, below the top of the stove oven, connecting with an exit flue under the bottom and up the back of the reservoir, in combination with it, so that the reservoir formed part of the flue walls, and the reservoir B, located at the rear of the stove and above the flue exit passage, all of which is arranged in Exhibit G so that the gases of combustion when passing to the exit will come in contact with said reservoir. The elements that I have enumerated are the ones that I have found to exist in said claim, when making the comparison named.

Q. 56. Taking this statement of the scope of the 3d claim of Bussey's reissue, in what respect does it differ from the first claim of said reissue?

A. The third claim is ready for a subconstruction of the elements named, which do in themselves heat the reservoir upon the bottom and back without taking into account the heating of the front side of the reservoir by conduction. The claim is also more specific as to the location of the exit passage F, when compared with the top of the oven, and in the respects that I have named differs from the first claim.

Q. 57. Does not the construction described in the first claim necessarily include an exit flue below the top of the oven?

A. I think inferentially it does, although not so stated in the claim specifically.

Q. 58. Referring to the cooking stove shown in said reissue, does not said first claim necessarily include an exit flue below the top of the oven?

A. I have answered that inferentially, I consider that it does.
261 I would not feel warranted, however, in giving a legal interpretation
to the force and effect of the claim, independent of what I consider to be the nature of the invention; as I understand it, under the qualification named which I have made, it is the only construction shown and described.

Q. 59. In what respect does said third claim differ in its elements from the second claim in said reissue, as interpreted by you above?

A. It does not differ essentially excepting in the fact that it specifically designates the location of the parts inferentially understood as included in the second claim.

Q. 60. Do you or not consider that said second claim contemplates an exit flue beneath the top of the oven.

A. I think inferentially it does. How far in a legal sense it must be arbitrarily so interpreted I do not feel competent to answer.

Q. 61. How far in view of the state of the art would it be necessary to so interpret it?

(Objected to as not being proper cross-examination.)

A. My own impression is, with my present recollection of the state of the art, that it does refer to an exit flue placed below the top of the oven.

Q. 62. What elements did you consider as included in the 4th claim of said reissue when you decided that Exhibit G was found in said claim?

A. The same elements that are included in the 2d and 3d claims, limited to an arrangement of them by which the reservoir could be heated by means of the exit flue, when the direct draft from the fire-box to the smoke-pipe was employed.

Q. 63. Do you not consider that the function of heating the
262 reservoir by a direct draft from the fire-box to the smoke-pipe be-
longs to the construction shown or described in the first, second, and third claims of said reissue?

A. I meant to include in my last answer also the first claim. Inferentially I believe that the illustration in the patent does so condition the invention, that is to say, no other construction is shown and described.

Q. 64. Is any other construction than one in which the reservoir can be heated by direct draft from the fire-box to the smoke-pipe suggested in said reissue, or the first, second, third, or fourth claims thereof?

A. There is not.

Q. 65. Does not said reissued patent describe and show only a vertical exit pipe in the rear of the reservoir, which is entirely external to said reservoir?

A. The vertical exit pipe E′, shown in the drawings, has three of its sides formed externally, and one of its sides formed by the reservoir wall at the rear.

Q. 66. Does any portion of said vertical exit pipe E enter the reservoir space?

A. It does not, unless when in forming one of the walls of the exit flue at the back it can be so interpreted.

Q. 67. Do you find in said Exhibit G a vertical exit flue of this character?

A. I do find an exit flue at the rear of the reservoir in the stove Exhibit G, connecting with a horizontal flue beneath the reservoir, the vertical portion of which has a curved wall separating the flue from the reservoir in the stove Exhibit G, connecting with a horizontal flue beneath the reservoir, the vertical portion of which has a curved wall, separating the flue from the reservoir, and in which the curve of the flue is extended into the reservoir space, forming a curved wall for the flue in Exhibit G, instead of the straight one which is found in the Bussey reissue. With
263 this difference that I have named in the construction, I do find an exit flue of the character named in the question.

Q. 68. So far as the purpose of heating the water in the reservoir is concerned, which, in your opinion, is the more effective construction, that shown in Exhibit G, or that shown in the Bussey reissue?

A. If by the term "effective," named in the question, capacity to heat is meant, Exhibit G would have a greater one than that shown in the Bussey reissue.

Q. 69. Looking at letters patent 142932 (Little and Nation), please state whether said patent describes and shows a base-pan which forms a part of the back plate of the stove.

A. I do not understand that the base-pan forms a part of the back plate of the stove, as shown; it is an enclosure formed upon the back plate of the stove. The specification states in regard to the subject-matter "A represents an ordinary three-flue cooking stove, upon the back plate B of which is formed a base-pan, C." This base-pan is shown as extended rearward from the back horizontally parallel with the top.

Q. 70. Does not the drawing of said patent show that said base-pan is not a structure separate and distinct from the back plate of the stove?

A. I do not so understand it in the sense that the question is asked, for it is shown and described as an attachment to the back of an ordinary three-flue stove, and the back of the stove is illustrated and designated by letter reference at B; while it is attached to the back, I cannot understand that it forms a part of the back.

Q. 71. Do you not find in Figures 2 and 3 of said patent a "continuity of lines" of the back plate and the pan?

A. I do.

264 Q. 72. When in a drawing you find a "continuity of lines," does it not show to you that the devices or structure bounded by such lines are not separate and distinct from one another as structures?

A. It might be inferred from such a continuity of lines that they were cast in one piece in the absence of any description to the contrary. To illustrate what I mean, the hearth of the stove is formed upon the front, although separately made and attached to it, and in the Exhibits 2 and 3 of the patent under examination the base-pan C may be cast with the back, as shown in the drawing in lines of continuity, and still form no part of the back.

Q. 73. Do you not find that the base-pan C described in said patent 142932 has a cover other than and different from the reservoir bottom, which is placed thereon?

A. It has.

Q. 74. Do you find any such cover in Exhibit G?
A. I do not.

W. E. HAGAN.

Signed and subscribed to before me this 4th day of April, 1878.
[SEAL.] H. S. SPRAGUE,
Notary Public, Wayne County, Michigan.

265 The circuit court of the United States for the eastern district of Missouri.

ESEK BUSSEY AND CHARLES A. MCLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY of St. Louis, defendants.
In equity. No. 1039.

Testimony taken on the part of the complainants, under the sixty-seventh rule of practice, as amended, for the courts of equity of the United States, by L. L. Walbridge, special examiner, duly appointed by the said court to take depositions in said cause, Thursday, May 3d, 1877, at the office of Samuel S. Boyd, esq., No. 506 Olive street, St. Louis, Mo.

Present: Charles J. Hunt, esq., counsel for complainants, and S. S. Boyd, esq., counsel for defendants.

CHARLES MCLEOD, being produced and sworn as a witness on the part of the complainants, deposeth and saith:

Direct examination by CHARLES J. HUNT, Esq.:

Int. 1. What is your name, age, and residence?

266 A. My name is Charles McLeod; I am forty-one years of age, and a stove manufacturer, and reside in Troy, N. Y.

Int. 2. Are you one of the parties to this suit?

A. I am one of the complainants.

Int. 3. Did you ever have any negotiations with the Excelsior Manufacturing Company or with Mr. Bell, the secretary, in regard to his purchasing or obtaining a license from Bussey and McLeod to use their patent of 1866, covering a low-down reservoir?

A. I did.

Int. 4. Will you state the circumstances that led to that negotiation, and what it amounted to?

A. In the spring of 1874, I think in May, Mr. Bell and Mr. Little visited us in Troy. We claimed the stove they were making infringed our patent of July 24th, 1866. Mr. Bell said that Mr. Little had a patent for the construction they were making, and suggested that I come to St. Louis and see if we could not make some arrangement in regard to our patent and Nation and Little's.

Int. 5. Did you go to St. Louis in accordance with that suggestion?

A. I went to St. Louis in June, 1874.

Int. 6. You may state what occurred there in that negotiation in regard to this patent, and also the Little & Nation patent.

A. Mr. Bell said they were willing to pay one royalty if the matter of the Nation & Little patents could be arranged, and suggested that we purchase the Nation and Little patent, and the company of which he was secretary would take a license under them.

Int. 7. You may state whether you made an arrangement with Nation and Little in regard to their patent, and also whether the Excelsior Manufacturing Company took a license from you for this patent and for yours for 1866.

267 A. We purchased the Nation & Little patent June 2d, 1877, and the next day the Excelsior Manufacturing Company took a license under these patents, agreeing to pay us a royalty of 50 cents each in case the royalties were paid promptly, or $1.00 each in case they were not paid promptly.

(Defendants object to stating the terms of the license, as the license will speak for itself.)

Int. 8. Look at that license and state if that is the license that you entered into at that time. (Refers to Complainants' Exhibit K.)

A. This is the license.

Int. 9. How long did they pay a royalty under that license?

A. They paid us $500 on account of the license fee.

Int. 10. How long a time did that cover?

A. They made no settlement of the number of stoves sold, but said that would cover the amount due, I think, for the one year.

Cross-examination by S. S. Boyd, Esq.:

Cross Int. 1. You say that Mr. Bell said he would take a license under them. You mean to include in this your own patent as well as that of Little & Nation's patent, do you not?

A. I do not, because they already had a license under our 1866 patent.

Cross Int. 2. Do you mean, then, to say that Mr. Bell agreed to take a license under the Little & Nation patent without your including in such license any other patents belonging to you?

A. I don't remember as to that.

Cross Int. 3. How does it happen, then, that this license does include patents then other than the Little & Nation patents?

268 A. Because we used a blank form of printed license that I had with me.

Cross Int. 4. You mean, then, to say that the fact that this license included patents already issued to you had no significance in the granting of the license?

A. I mean to say that they agreed to pay us the royalty whether they used the whole or only part of any of the patents.

Cross Int. 5. Did they agree to accept a license unless you included in that license the patents owned by you other than the Little & Nation patent?

A. I don't remember that anything was said about it.

Cross Int. 6. Will you state positively that it was not the agreement and that it was not the consideration under which this license was taken that it should include patents other than the Little & Nation patents?

A. I will not.

Cross Int. 7. Is it not a fact that at that time the firm of Bussey, McLeod

& Co. claimed to own patents which covered the low-down reservoir construction?

A. I think we did.

Cross Int. 8. Was it not the purpose of the Excelsior Manufacturing Co., and was not that purpose expressed to you, to take such license as would relieve them from all claims of all kinds under any patents that you might hold up to the date of giving the license?

A. It was intended that this one royalty would cover the use they might make of any of our patents.

Cross Int. 9. Was not that a condition under which the license was taken, and if such condition had not been complied with would a license have been received?

A. I cannot say.

Cross Int. 10. Then you say there was nothing said during the negotiation in relation to this license which gave you to understand that
269 the purpose of obtaining the license was to relieve them of all claims from any patents which you held?

A. I don't remember; I cannot say particularly.

Cross Int. 11. Do you believe, or did you at that time believe, that if this license had included only the Little & Nation patent they would have accepted it?

A. I think the Nation & Little patent and ours were included, so as to prevent their being called upon to pay Nation & Little a license fee as well as ourselves.

Cross Int. 12. Did they ever intimate to you that they intended to pay or would under any circumstances pay a license fee to Little & Nation?

A. I don't remember of their saying anything about it.

Cross Int. 12. At the commencement of the negotiation in regard to this license matter wasn't it expressly stated by Mr. Bell that he was willing to pay one license fee?

A. He said to me that he was willing to pay one license fee.

Cross Int. 14. If he had paid a license fee only on the Little & Nation patent he would still have been subject to pay a license under the patent owned by you prior to procuring the Little & Nation patent, wouldn't he?

A. He would.

Cross Int. 15. That is, that you consider that the Little & Nation patent was subject to an older patent held by you?

A. We did.

Cross Int. 16. You say that Mr. Bell suggested to you the purchase of the Little & Nation patent; do you mean by that that the reason you did purchase was on account of the suggestion made by him?

270 A. The reason we purchased then was because he said that if we purchased them with our patents he would pay one royalty.

Cross Int. 17. When you purchased the Little & Nation patents you were aware of the fact that Mr. Filley claimed that Little & Nation were not the inventors of the device set forth in those patents, were you not?

A. Mr. Filley claimed that he conceived the invention before Nation & Little.

Cross Int. 18. Was not your agreement with Little & Nation as to the purchase of those patents dependent upon the fact of the patent being invalid as far as the claims of Mr. Filley were concerned?

A. I think not.

Cross Int. 19. Was not your payment to Little & Nation of the purchase-money of these patents dependent at all on that question?

A. The payment for the patent was to be a portion of the royalties we received from the Excelsior Manufacturing Company.

Cross Int. 20. Then the compensation they were to receive from you for this patent that you bought of them was to be measured by the money you received from the Excelsior Manufacturing Company for the use of this patent, was it?

A. We were to pay them a certain amount of the royalties received up to $10,000.

Cross Int. 21. That all the parties received from the Excelsior Manufacturing Company?

A. Or any one else using the patent.

Cross Int. 22. Why was that condition made, that the payment for this patent should depend on the royalties you received from the Excelsior Manufacturing Company?

A. Because we thought it was cheaper for us to pay them in that way.

271 Cross Int. 23. Did or not the fact that Mr. Filley claimed he was the inventor of this device induce you to insist upon such an agreement?

A. It did not, because Mr. Bell told us the Excelsior Manufacturing Company would take a license if we bought.

Cross Int. 24. Then I understand you to say that the fact that Mr. Filley stated that this was not the invention of Little & Nation had no influence whatever upon the terms of the agreement you made with Little & Nation as to the purchase of the patent?

A. It did not, because from evidence Mr. Nation showed me I came to the conclusion that they conceived the invention before Mr. Filley.

Cross Int. 25. From that evidence you were satisfied that the Little & Nation patents were valid as far as the claim of Mr. Filley was concerned, were you?

A. I was.

Cross Int. 26. If that is a fact, then what influence upon your purchasing this patent would the circumstance that the Excelsior Manufacturing Company agreed to take the license have?

A. Because at that time I was not aware that any one else was using the Little & Nation construction.

Cross Int. 27. If the Excelsior Manufacturing Company had refused to take a license would you have purchased these patents from Little & Nation?

A. I don't think we would.

Cross Int. 28. Why not?

A. Because we didn't want them.

Cross Int. 29. Why didn't you want them?

A. Because no one else was using them.

Cross Int. 30. Is it your custom never to purchase a patent until you find that some one else is using it besides the owner of the patent?

272 (Objected to as irrelevant as to what their custom was.)

A. I don't think we had any custom in regard to these matters.

Cross Int. 31. Is that the only answer you can give, that the reason you would not have bought these was because you didn't want them?

A. I think it is.

Cross Int. 32. And you cannot give a reason why you would not want them?

A. No more than I have stated.

Cross Int. 33. Wouldn't they have been just as valuable for your own use even though other people hadn't used them?

A. We didn't want to change our reservoir to use them.

Int. 34. Was there not an agreement between you and Little & Nation that you should enforce their claims for these patents?

A. I cannot say positively, but I think not, as I have not a copy of the agreement with them with me.

Int. 35. What is your best impression as to whether that was an agreement or understanding between you and Little & Nation, at the time of or prior to the time of purchasing these patents from them, that you should enforce their claims as inventors of them?

A. I don't think we had an agreement of that kind.

Cross Int. 36. Are you sure you did not?

A. I cannot say positively.

Cross Int. 37. Do you think it is probable that you could have had such an agreement as that without remembering it?

A. I have not seen the agreement in three or four years; hence I cannot state what is in it exactly.

Cross Int. 38. Will you produce that agreement?

A. Yes, we will, if it is in existence.

273 Cross Int. 39. Was there no oral agreement to this end between you and Little & Nation?

A. I think not.

Cross Int. 40. Does not the compensation that Little & Nation are to receive for these patents from you depend upon the question of the validity of these patents?

A. The only compensation they receive is a portion of the money we collect for the use of them.

Cross Int. 41. Therefore it does depend entirely upon the validity of the patent?

A. It does.

Cross Int. 42. The Excelsior Manufacturing Company duly notified you that they should no longer consider those licenses as binding upon them, did they not?

A. They notified us, I think, in May or June, 1875, that they would consider the license null and void.

(Signed) CHARLES A. McLEOD.

Rufus Lape, being produced and sworn as a witness on the part of the complainants, deposeth and saith:

Direct examination by Charles J. Hunt, Esq.:

Int. 1. What is your name, age, residence, and occupation?

A. My name is Rufus Lape; my age is 39; residence, Chicago; I am a stove manufacturer.

Int. 2. Are you acquainted with the parties to this suit?

A. I am.

Int. 3. Were you present at any time when Mr. McLeod was making a bargain with Mr. Bell or Mr. Filley in regard to their taking a license to use certain patents belonging to Bussey & McLeod?

A. I was.

274 Int. 4. Will you state what that conversation and agreement was; that is, state the whole of the transaction, as near as you can recollect it, beginning at the beginning?

A. It was in June, 1874; Mr. McLeod and myself were here at St. Louis to see about the reservoir and reservoir licenses. We called upon the Excelsior Manufacturing Company in regard to their taking a license or infringing on the patents, and Mr. Bell said to us that if we—that is, if Mr. McLeod—I will state, although I don't know as it makes any difference now, that I was then one of the firm of Bussey, McLeod & Co.—but if we could make an arrangement and purchase these patents of Nation & Little, and we could agree on the terms of the licenses, that they would take a license. We then saw Nation and Little at the Southern Hotel in the evening and purchased the patents, with the proviso to pay $10,000 for them, to be paid in a royalty of 25 cents each for all that we received. That was the amount stated, and there was an agreement. I didn't see the agreement there made, but I think they have an agreement as well as Bussey & McLeod stating these facts, and I think it was the next day that the Excelsior Manufacturing Company took this license which I now hold in my hand, marked "Exhibit K." I think those are the main points.

Cross-examination by S. S. Boyd, Esq.:

Cross Int. 1. When was the first time that you saw either Mr. Little or Mr. Nation during that visit?

A. I think it was in the evening, at the hotel.

Cross Int. 2. How came they to come to the hotel?

A. Mr. Little was an old friend of mine, and used to always call on me when I came to the hotel or used to come here.

Cross Int. 3. How did he know you were there?

275 A. I don't know whether I was up at the foundry or not before they came to the hotel. Mr. Filley took Mr. McLeod and I to the foundry and showed us around. I can't say whether it was before or after, but I think it was before, and we naturally invited them to call down and see us.

Cross Int. 4. Prior to this conversation with Mr. Bell hadn't you seen either Little or Nation in regard to the matter?

A. I don't recollect that we had; I can't state positively.

Cross Int. 5. When did you first hear anything about Little & Nation having any patents?

A. Oh, quite a while before.

Cross Int. 6. From whom?

A. From the patent; I think the patents were granted—seeing the patents that were issued in Washington.

Cross Int. 7. When did you get here to St. Louis in that trip; can you give the day of the week, or the month, or time of day?

A. I cannot; only it was just about the 1st of June.

Cross Int. 8. Did you get here in the morning or at night?

A. I think we got here in the forenoon, if I remember right.

Cross Int. 9. About 8 o'clock in the morning?

A. I don't think it was as early as that.

Cross Int. 10. Where did you go first after you got here?

A. We went first to the Excelsior Manufacturing Company's store.

Cross Int. 11. Directly to the store?

A. Well, I can't say we went directly to the store, but we went
276 there; I think it was about our first visit; either there or Bridge,
Beach & Co.'s; I can't say which.

Cross Int. 12. Did you come down here for the purpose of buying Little & Nation's patent?

A. I could not say.

Cross Int. 13. Was anything said about the purchase of the Little & Nation patent prior to your coming to St. Louis?

A. Nothing specially.

Cross Int. 14. Were the Little & Nation patents the subject of conversation between you and McLeod before you came to St. Louis?

A. Nothing specially.

Cross Int. 15. Were they mentioned?

A. I don't remember that they were.

Cross Int. 16. Your purpose in coming to St. Louis was to look out for the license under the Bussey patents, was it not?

A. To look out for all kinds of patents that we could get hold of.

Cross Int. 17. Then you came to St. Louis to see what patents he had on cook-stoves, to see if you could buy them, did you?

A. No, sir.

Cross Int. 18. What did you come for?

A. I think I had some special business, stove business, as far as I was concerned, aside from the patents.

Cross Int. 19. You say in your direct examination you came down here to look out about licenses; now what licenses?

A. Reservoir licenses.

Cross Int. 20. Already issued or some that you wished to issue?

A. To issue.

Cross Int. 21. Under what patents?
277 A. I cannot say.

Cross Int. 22. Was there any conversation between you and Mr. McLeod on the way here, or after you got here, prior to your visit to the Excelsior Manufacturing Company, in relation to the Little & Nation patents?

A. I can't say positively.

Cross Int 23. Will you say that the first that was mentioned in regard to the Little & Nation patent was during this conversation with Mr. Bell at the Excelsior Manufacturing Company's office?

A. I think it was; Mr. Filley was, I think, the first one that spoke about them. I can't say whether it was Mr. Filley or Mr. Bell.

Cross Int. 24. In your direct examination you said Mr. Bell; now which is it?

A. Well, I think Mr. Filley also.

Cross Int. 25. Now which was it that suggested?

A. Both.

Cross Int. 26. That suggested to you that you should buy the Little & Nation patent?

A. Mr. Bell.

Cross Int. 27. Now prior to that suggestion by him will you say there was nothing said between you and Mr. McLeod in relation to the Little & Nation patent?

A. I don't remember that there was.

Cross Int. 28. Now isn't it a matter of fact that one of the purposes of your visit here was to investigate that very matter?

A. I can't say positively that it was.

Cross Int. 29. Was not the purpose of your visit here to look out for the licenses already issued under the Bussey and McLeod patents, and examine into this new patent which you had already noticed?

A. Well, that would be as a matter of course, would be natural.

278 Cross Int. 30. Well, you went, after you arrived here, first to the Excelsior Manufacturing Company or Bridge, Beach & Co.'s?

A. Yes, I think so, as near as I can recollect.

Cross Int. 31. When did you first see Little & Nation during that visit?

A. I think we first saw them when Mr. Filley took us up to the foundry—the first time we saw them.

Cross Int. 32. Did you then make an appointment with them?

A. I don't remember that we did specially.

Cross Int. 33. How came they both to come to the hotel in the evening if you made no appointment?

A. Well, I didn't make any appointment with them, and I don't remember hearing any appointment being made.

Cross Int. 34. Who drew up the agreement between you?

A. Mr. McLeod, I think.

Cross Int. 35. Was it already drawn before they came there?

A. No, sir.

Cross Int. 36. Wasn't it in blank?

A. No, sir; it was in nothing—no agreement made.

Cross Int. 37. How long were they there that evening?

A. Oh, I think until 12 o'clock.

Cross Int. 38. At that interview this whole matter of the claim of Mr. Filley to being the inventor of these devices was discussed, was it not?

A. I don't remember that it was.

Cross Int. 39. Well, was there nothing said at that interview in regard to Mr. Filley claiming to be the inventor of this device?

A. I don't remember anything said about it.

279 Cross Int. 40. When did you first hear that he did claim to be the inventor of this device?

A. Mr. Filley was the man that spoke about it himself, at the time we called, during the day some time—talking over the patents.

Cross Int. 41. Was that prior to this interview with Little & Nation that this agreement was consummated?

A. I think it was; yes.

Cross Int. 42. They were there how long in the evening?

A. I think until 12 o'clock.

Cross Int. 43. From what time?

A. 8 or 9 o'clock; somewhere thereabouts.

Cross Int. 44. Do you mean to say, then, that they were there three or four hours discussing the terms of the agreement in regard to the purchase of this patent, and that you at that time had knowledge of the fact that Mr. Filley claimed to be the inventor of it, and that that subject was not discussed between you?

A. I mean to say that they were there three or four hours, I think, sure, conversing about these patents and the conditions. I don't remember of Mr. Filley's claim being discussed there, for we didn't think it worth discussing.

Cross Int. 45. Why not?

A. Because we were satisfied that they were the inventors and owners of the patent.

Cross Int. 46. How were you satisfied of that fact?

A. From our past experience in patents.

Cross Int. 47. Now what, in your past experience, led you to decide summarily that Mr. Filley's statement that he was the inventor of this device was untrue?

A. I could not say.

Cross Int. 48. When you were at the foundry that day prior to the interview in the evening, were you with Mr. McLeod all the time?

280 A. No, sir; I think not all the time we were around the building there; I remember we had a rain shower. If I remember right, we sat quite a while in the weigh-office waiting for the shower to stop.

Cross Int. 49. Did you have any conversation with Little & Nation while you were at the foundry that day?

A. Nothing special; no more than appertaining to the business and talking about old times.

Cross Int. 50. General business of the foundry?

A. Yes. Little, mind you, and I were boys and lived neighbors years ago, and that made us more familiar.

Cross Int. 51. Do you know whether McLeod had any conversation with Little & Nation while at the foundry that day?

A. I don't remember.

Cross Int. 52. If he had had any extended conversation with them you would have known it, would you not?

A. I can't say; I don't think that he did, as far as I remember.

Cross Int. 53. If he had any conversation with them in relation to the matter, he never told you of it, did he?

A. I cannot say.

Cross Int. 54. Then you say that during the whole of the interview in the evening, occupying from three to four hours, nothing was said as to the claim of Mr. Filley being the inventor of this device?

A. I don't remember that there was.

Cross Int. 55. In your opinion the fact that Mr. Filley claimed to be the inventor of this had no influence whatever on the terms of the agreement?

A. No, sir; not to my mind.

Cross Int. 56. Well, from what Mr. McLeod had already said, do you think it had any influence on him in determining the terms of the agreement?

281 A. I cannot say as to that.

Cross Int. 57. After that interview with Little & Nation did you have any other interview with them during that visit?

A. I think not.

Cross. Int. 58. When did you go away?

A. I forget. I think Mr. McLeod left the next afternoon, if I remember rightly. He left before I did I know.

Cross Int. 59. Were you with him during the day prior to his departure?

A. Most of the time.

Cross Int. 60. Did he go up to see Little & Nation?

A. Not to my knowledge.

Cross Int. 61. Well, during that interview with Little & Nation you say they said nothing at all about this claim of Mr. Filley to be the inventor of this device?

A. I don't remember that they did.

Cross Int. 62. They produced no proofs to satisfy you that that claim was unfounded, at that interview, did they?

A. We didn't talk about them.

Cross Int. 63. During the whole of the interview, during that evening and the prior visit to the foundry, as far as you know, nothing was ever said by Little & Nation in regard to this claim of Mr. Filley, and no proofs were produced by them in regard to the validity of their own claim, were there?

A. I cannot say positive.

Cross Int. 64. As far as your knowledge extends there wasn't, was there?

A. To the best of my recollection, no.

Cross Int. 65. Did you go to Mr. Filley the next day after the consummation of the agreement?

A. I think we did.

282 Cross Int. 66. Did you have any conversation with him?

A. I think we saw him and Mr. Bell.

Cross Int. 67. When was the license given; that next day after the interview in the evening, with Little and Nation?

A. I think it was.

(Signed) RUFUS LAPE.

DAVID H. NATION, being produced and sworn on the part of the complainants, deposeth and saith:

Direct examination by CHARLES J. HUNT, Esq.:

Int. 1. What is your name, age, residence, and occupation?

A. My name is David H. Nation; my age thirty-nine, residence St. Louis, and occupation pattern-maker.

Int. 2. Will you look at these letters patent, Complainants' Exhibits B, C, D, and E, and state if you are one of the joint inventors mentioned in such patent?

A. Yes, sir; I recognize them as being a joint inventor.

Int. 3. State, if you please, when you first conceived the idea of the invention described in these patents, beginning with the first

A. Well, we were at work on reservoir stoves sometime previous to the fall; I don't know that I can give the date exactly without a memorandum that I had in regard to the interference case with Buck, but we have been engaged on reservoir stoves since 1869, while others owned and had obtained a patent at that time, 1870, 1871, and I think 1873, on the same class of stoves.

283 Int. 4. Can you tell when you first conceived of the idea of the base pan in connection with the reservoir at the back of the stove?

A. You mean the low-down?

Int. 5. Yes.

A. The base pan we used previous to that on the low-down. I think that it was during the; summer of 1872 I conceived it, in connection with our reservoir on the front end of the stove, and I had made sketches all along of different plans, and arranging that particular plan of stove and others from that time until October or November, and have been continually since.

Int. 6. Can you tell when you completed the first model of such a stove?

A. Yes, sir; the one in question it was on the 10th of November.

Int. 7. Who made that model?

A. Well, I cut the plate myself and took it to a tinner by the name of Edward Grovels, on Broadway.

Int. 8. How soon after that did you make an application for a patent?

A. I cannot tell the exact date, but it was in November the application was made. It was necessary to transmit all of the information to Washington, and I have kept a book that I think tells the time. This is dated November, 1872. The date is not stated, but it must have been immediately after having the model made.

Int. 9. Have you any sketches of this invention which you made at that time or before?

A. Yes, sir, I have got some sketches.

Int. 10. Will you produce them?

A. Yes.

(Sketches produced and marked "Complainants' Exhibit L.")

284 Int. 11. When was this drawing made?

A. That was made in November—8th or along in that locality. It might have been a day or two after. Mr. Clow and myself were talking how the stove might be improved, and I suggested plans to him and he suggested some to me. I have a pretty good memory of his suggestions at the time. They differed very essentially from these; however, it was to improve the direct draught to pass up over the top, make a sink in the top of the reservoir; and I asked him if he remembered the suggestion I made at the time, and he said he did.

(Defendant's counsel objects to what Clow states.
Sketch referred to offered in evidence.)

Int. 12. When did you obtain this patent?

(Defendant's counsel objects. The patent will speak for itself.)

A. The first application was rejected on account of the interference sometime in December, I think, and we made an appeal, and they recommended that as we hadn't described how our invention differed from the construction of the model, that we should make a new application, file a new application, and the patent was granted.

(Defendant's counsel objects, as these suggestions must have been in writing, and the writing is the best evidence of it.)

Cross-examination by S. S. Boyd, Esq.:

Cross Int. 1. For which patent now in controversy did you say your application was filed in November, 1872?

A. Well, this one, I believe, numbered 142933. I believe that is the one. They are very similar.

Cross Int. 2. Please look at them and determine which one is it.

285 A. It is 142933, I believe is the one.

Cross Int. 3. You say that the application for 142933 was filed in November, 1872?

A. No, sir; I say that because that was rejected—was filed in December, 1872, the first of December, near the third—filed in the Patent Office the first part of December. I don't know, I can't state the exact date, but I believe it was the 3d, 1872.

(Answer objected to as not responsive to the question and endeavoring to introduce into the answer the contents of a written instrument without producing the written instrument.)

Cross Int. 4. The application, 142933 was filed on the first day of August, 1873, was it not?

A. Oh, yes; that particular application was, yes.

Cross Int. 5. What were your duties in the fall of 1872?

A. Well, I was at work at the Excelsior Manufacturing Company's establishment as a pattern-maker.

Cross Int. 6. Under whose direction?

A. Well, Mr. Little as superintendent, and Mr. Filley as president, as the proprietor of it.

Cross Int. 7. Were any of your instructions as to what pattern you should make, as to a change in the patterns, given to you by Mr. Filley?

A. Yes, sir; he gives all the instructions as to what we shall make, of course, being the proprietor.

Cross Int. 8. Then whenever patterns are made there or any changes made in the patterns it is always subject to the directions of Mr. Filley?

A. Subject to direction, sir.

Cross. Int. 9. Does Mr. Little, of his own motion ever direct particular patterns to be changed or new patterns to be made, without prior consultation with Mr. Filley?

286 A. I think not, sir; I can't say certain about that, because I am not the individual; I think not.

Cross Int. 10. Do you remember that in October, 1872, a low-down reservoir stove was brought to the pattern-shop for the purpose of examination?

A. Yes; I remember the stove.

Cross Int. 11. Do you remember that that stove had this back plate taken off, and its construction examined, particularly the construction of the low-down reservoir portion?

A. Yes; we examined it.

Cross Int. 12. Don't you remember that Mr. Filley expressed dissatisfaction at the construction of the low-down reservoir in that stove?

A. Yes, sir.

Cross Int. 13. Didn't he state that the mode of passing the draught through the base pan was imperfect and improper, and that he wished to improve upon that construction?

A. He said that he wished to improve upon that construction; yes, sir.

Cross Int. 14. Wasn't he there repeatedly, day after day, examining that stove?

A. He was there as much as once every day, I should think.

Cross Int. 15. Every day that he came there while the stove was in this condition, taken apart for the purpose of examination, did he not examine it for the purpose of determining in what way to change it, in order to produce the results which he sought?

A. Yes, sir; yes; he was at work at it that way, certainly.

Cross Int. 16. About how long was that stove there, do you think?

287 A. Well, I know about the time it came, but I can't tell how long it remained there.

Cross Int. 17. It was there several weeks during this examination?

A. Yes, sir; several weeks during the examination.

Cross Int. 18. Didn't Mr. Filley during that time have daily consultations with you in relation to the changes to be made in that construction?

A. No, sir; not daily consultations. I think the stove examined there sometime before the matter was commenced to be talked about.

Cross Int. 19. After the matter was first broached didn't he thereafter have repeated conversation with you as to the mode of changing that construction?

A. Yes, sir; yes.

Cross Int. 20. Did you suggest to him at the first conversation this matter of improving that construction?

A. Yes, sir; I believe that I suggested the use of the base pan, and heating the boiler surface of the reservoir.

Cross Int. 21. The base pan as a structure was old at that time, was it not?

A. It was attached to the high reservoir; yes, sir.

Cross Int. 22. Was this a high-reservoir stove you were examining, or low-reservoir stove?

A. It was a low reservoir.

Cross Int. 23. How was that reservoir heated?

A. Through part of the front side and a small portion of the corner of the bottom.

Cross Int. 24. That had a small base pan underneath?

A. No, sir; the projection of the back mounted up, intersecting with the reservoir, so that it would heat that, and let the plate running down some distance, probably four or five inches of the reservoir, be exposed to the heat.

288 Cross Int. 25. Now, from the time that stove was brought there, and you began to discuss the way of changing it, how long a time elapsed prior to your commencing work upon the patterns of the construction that was adopted?

A. I think it must have been five weeks fully.

Cross Int. 26. Now, during that five weeks how many times do you suppose you and Mr. Filley had consultations in regard to the way of changing that construction?

A. Well, I can't say the number of times, I am sure.

Cross Int. 27. Wasn't he there every day examining the construction?

A. I can't say that, sir. He was generally there every day, generally so.

Cross Int. 28 To the best of your knowledge and belief, wasn't he there every day during that time while this subject was under discussion?

A. Yes, sir.

Cross Int. 29. Do*u* you say that the very first time he spoke of changing this construction that you then suggested using the base pan covering the whole of the bottom of the reservoir?

A. Yes, sir.

Cross Int. 30. You told him that at once?

A. Yes, sir; covering the whole of the bottom.

Cross Int. 31. The first time the subject was mentioned you told him the way to improve that was to have a base pan covering the whole of the bottom of the reservoir?

A. I would like to state the exact conversation. Mr. Filley and he
wanted something different from what Bussey had in that stove; that he
had made arrangements with them to pay them a royalty for the
289 manufacture of it, and he didn't like it, and I suggested a sheet flue
under the bottom, exposing the bottom or surface of the reservoir
to the full amount of the heat; and said he, "That is worth thinking about,
to get it up"—to think it over, that is the idea.

Cross Int. 32. You do not mean to say, do you, that at that time it was a new construction to expose the whole bottom of the reservoir to the products of combustion?

A. No, sir; I don't pretend to say it was.

Cross Int. 33. The construction of having a base pan covering the whole of the bottom of the reservior was old at that time, was it not?

A. I think not, sir; I think it was not old at that time.

Cross Int. 34. Then from your knowledge of stove manufacturing, it is your opinion that at that time the base pan covering the whole bottom of the reservoir hadn't been used in cooking stoves?

A. The base pan had been used in connection with high reservoirs, but in high reservoirs the whole bottom surface of the reservoir is not exposed to the action of the heat.

Cross Int. 35. That would depend much on the fact whether the exit flue was in the rear or front of the reservoir, wouldn't it?

A. No, sir; they are made in the rear the ordinary way. A portion of the top was constructed to set over the end flues; that obstructs the heat from a part of the reservoir in a high reservoir stove.

Cross Int. 36. I return to my question; do you state that from your
knowledge of stove manufacturing that a low-down reservoir, having a
base pan covering the whole of the bottom of the reservoir, was not old at
the time you say you made this suggestion to Mr. Filley?
290 A. I am trying to think whether I had ever seen any low-down
reservoir of that construction where it covers the entire surface.
Some covered it part of the way, perhaps two-thirds of the stove might be.

Paris & Co., of Troy, in 1867, used a return flue from the damper up the front part of the reservoir, but I never saw it in a reservoir where the flue passed up. That didn't cover the entire bottom surface; I don't think it did.

Cross Int. 37. When you made this suggestion, as you say, that the way to remedy the defect was to have a base pan covering the whole bottom of the reservoir, didn't Mr. Filley tell you that Chamberlain, of Cincinnati, already had that construction?

A. Chamberlain, of Cincinnati? I don't remember that conversation at that time. Mr. Filley was about leaving at the time he remarked that it was worth thinking about.

Cross Int. 38. When do you remember that conversation?

A. Well, I have heard that, I can't tell when, but I heard that remark, either by Mr. Filley or Mr. Bell.

Cross Int. 39. When?

A. I can't state whether——

Cross Int. 40. During the time the subject of the change of construction of this stove was under consideration?

A. I don't remember that sir.

Cross Int. 41. The first suggestion you made to Mr. Fiiley was exactly what?

A. Well, I can't tell that there was any more than a suggestion made at that time. I can't tell the exact subject, but that, I am certain, was after I had suggested to Mr. Clow the mode of construction. We talked about this thing when the stove first came up there.

291 . Cross Int. 42. Who is that?

A. Myself and Clow.

Cross Int. 43. Now, will you state what suggestion you first made to Mr. Filley when he spoke to you about changing the construction of this stove?

A. The first suggestion I remember to have made was that they should heat the reservoir only on the bottom or under the entire surface of the bottom. That was about as near as I remember the subject of the conversation.

Cross Int. 44. Then all you said there was that you would suggest the way of remedying this defect was to heat the reservoir on its whole bottom?

A. Its whole bottom surface; yes, sir. Of course, there was only one way to do it, and it is very likely that was suggested, but I would not be certain about it.

Cross Int. 45. Then you say there is but one way of heating the whole bottom of the reservoir in a low-down reservoir stove?

A. Well, I don't know that I ought to say that but one way—that would be a way.

Cross Int. 46. Isn't it a fact there is but one way of making a base pan covering the whole bottom of the low reservoir?

A. No, sir, there might be some other ways; as I said before, the Paris reservoir, that is constructed so as to heat nearly the entire surface, but it makes a turn into the front flue, and the balance of the heat will circle through as the reservoir will heat.

Cross Int. 47. After you made this suggestion what next did you suggest?

A. Well, I showed Mr. Filley a sketch some time afterwards; I don't remember when it was exactly.

Cross Int. 48. How long afterwards?

292 A. It might have been within two or three days.

Cross Int. 49. It might have been within two or three weeks, might it?

A. No, I think not; I think it was earlier than that.

Cross Int. 50. What did that sketch show?

A. That sketch showed the sheet flue under the bottom and the pipe in the back.

Cross Int. 51. Where is that sketch?

A. I don't know where it is. It was made on a piece of white paper, and I think I gave it to Mr. Filley. I won't be certain about that, but I think he took it with him. I don't know about that, but I know he agreed with me that it was decidedly the best method at that time.

Cross Int. 52. What exactly did that sketch show, comparing it with the sketch you have introduced now?

A. Well, sir, it was a similar sketch to this. It showed the pan under here, the pipe on that side, and the course of the draught just as that does.

Cross Int. 53. In what respect did it differ from the sketch L? Point out specifically the difference between the two sketches.

A. I can't see any difference in the idea. It is exactly the same. The whole body of the stove was not shown. It was simply the rear part of the body that was shown of the stove.

Cross Int. 54. Then you say that the sketch you showed Mr. Filley at this time was as perfect, as far as indicating the construction, as the sketch L?

A. Yes, sir, as exhibiting the course of the draught, it was the same—yes, sir.

Cross Int. 55. What difference, if any, was there in the two sketches, as far as the principles of the present construction were concerned?

293 A. Well, the present construction is a portable arrangement, such as unhooking the base-pan, etc.; that could not be represented very well in a skeleton sketch, but the course of the draught passing under the bottom and up the back is pretty much the same.

Cross Int. 56. When did you make that sketch?

A. Well, I made it evenings. I don't remember when I made it exactly. It was some time previous to the time that we had talked the matter over; I can't tell; it was after this "L" was made, however.

Cross Int. 57. Now, how soon after the first conversation in regard to making this change will you say it was that you showed that sketch to Mr. Filley?

A. Making this change—well, I say that it was within two or three days after. I can't tell exactly the date.

Cross Int. 58. What next did you suggest to him as to the mode of changing?

A. The general principle is all I can remember now. We have been in the habit, both of us, suggesting, and arranging things, so I cannot designate any particular thing now.

Cross Int. 59. After you showed him this sketch, you are not able to state any particular suggestion that you made in regard to a change in the construction of the Bussey stove?

A. I can't remember, sir. The sketch shows all of the general principles. I don't know whether the suggestion to make a——

Cross Int. 60. Then I understand you that from that sketch, Exhibit L, and from the sketch you showed Mr. Filley, a competent pattern-maker could make patterns for the stove?

A. No, sir, he could not.

294 Cross Int. 61. Why?

A. Because a small skeleton sketch, the details are not drawn cross-sections, etc.

Cross Int. 62. How long would it take a competent pattern-maker and draughtsman, if he understood the subject-matter, from your sketch to make the proper drawing from which to make patterns?

A. Well, the way we make that, with the reservoir attachment to the ordinary cooking stove, it would perhaps take two or three days, depending on the amount of work, the moulding and curves, etc.

Cross Int. 63. There was no particular need of haste in getting out this reservoir there, was there?

A. Well, the work was wanted. I don't know that there was any particular hurry about the thing.

Cross Int. 64. Did Mr. Filley express any anxiety about getting a stove of the construction on this market as early as possible?

A. Well, Mr. Filley always favored the high reservoir; did at that time, saying it was decidedly the best, and I rather think Mr. Filley was opposed to low reservoirs at that time of all descriptions.

Cross Int. 65. He had decided to adopt a low reservoir at this time, had he not?

A. Yes, sir, I believe he had. He had procured a stove.

Cross Int. 66. He had procured a stove for the very purpose of making alterations in his pattern, in order to adopt that construction, hadn't he?

A. The Bussey construction, yes, sir.

Cross Int. 67. How soon would the foundry shut down after October?

A. Well, I didn't keep a memorandum.

Cross Int. 68. As a general thing, *and* you run all winter?

295 A. No. sir; not generally. They have run all winter occasionally, but I think usually shut down Christmas and started up some time in January. They have done it during busy years, I think, lying still perhaps two or three weeks. I can't tell exactly.

Cross Int. 69. Now, what is your impression as to whether Mr. Filley was desirous of getting this reservoir out on the market as soon as possible?

A. Well, I can't express an opinion that way, because I don't know his idea about it, but the general way is to get it out as soon as possible—any new thing we are producing.

Cross Int. 70. Now, didn't Mr. Filley tell you he wanted to get that stove on the market as soon as he could?

A. I don't remember that.

Cross Int. 71. Didn't he instruct you to prepare these patterns as soon as you could?

A. Well, yes; that is generally the case, but I don't remember the particular conversation at that time.

Cross Int. 72. Don't you know——

A. I don't know; no, sir.

COUNSEL (continuing)—that Mr. Filley instructed you as soon as the construction of the stove had been decided on to proceed at once and prepare the patterns?

A. I can't say what Mr. Filley's exact wording was; I don't know what he said at that time about that, but we went right along with them. Yes, he may have made that remark; I can't say positively. I don't remember.

Cross Int. 73. Now, you say that that stove was the subject of conversation and discussion between you and Mr. Filley for five weeks as to the mode of changing it, and you further say that within three days after
296 the subject was first broached you exhibited to Mr. Filley a drawing sufficient for an ordinary pattern-maker to make proper patterns to construct a stove; now, what were you doing all the rest of those five weeks?

A. I don't know that I understand you; what I said was that the stove laid there some time before anything was said about it. That is the idea I have of it now. It stood there, but when the subject was broached I don't remember exactly what time we went on with it; and while it stood there myself and Mr. Clow were making suggestions; that is, I don't say continually, but we were on one or two occasions.

Cross Int. 74. Have you not stated that the matter of the change in this construction was a subject of conversation between you and Mr. Filley for the space of about five weeks?

A. I don't think I said it was continually the subject of conversation; I don't exactly remember that.

Cross Int. 75. Was it not a fact that from the time the subject was first broached between you and Mr. Filley until the time the construction was finally decided upon a period of at least five weeks elapsed?

A. I don't think, sir, it was so long as that.

Cross Int. 76. How long was it?

A. Well, I can't tell.

Cross Int. 77. Give your best impression.

A. I can't tell exactly when it was broached; I don't remember, but I know the stove was there a considerable time.

Cross Int. 78. How long was the change of construction a matter of discussion between you and Mr. Filley?

A. I don't remember, sir, how long; I can't tell.

Cross Int. 79. Was it a week?

A. Well, I don't remember that; it may have been a week, it may have been more.

297 Cross Int. 80. Why didn't you, instead of showing Mr. Filley the imperfect sketch, which you say you showed him, show him Exhibit L, if it was in existence at that time?

A. Well, I don't know that I had this with me at that time. I didn't always carry it with me. I sometimes make these sketches at the shop and sometimes at home.

Cross Int. 81. Well, as I understand you, the sketch that you say you showed to Mr. Filley had been made some time anterior to the time of showing it to him.

A. It was a fac-simile what I had. Yes, it was a small sketch, very similar in form, on white paper.

Cross Int. 82. What do you mean by a fac-simile copy of it?

A. Well, yes, not a tracing copy, but the same construction.

Cross Int. 83. Do you mean to say the sketch you showed Mr. Filley was one drawn from the skeleton Exhibit L?

A. No, sir, not drawn from it, but it was drawn from the idea.

Cross Int. 84. It was a separate and independent one?

A. It was a separate and independent one; yes, sir.

Cross Int. 85. Why did you carry that sketch?

A. Well, I brought that to the shop. I don't know why I carried it. (Last question repeated.)

A. Well, I very often carry sketches in my pocket; no particular object.

Cross Int. 86. Did you bring the sketch to the shop on purpose to show to Mr. Filley?

298 A. I may have done so, or I may have brought it to show to some of the men. We usually talk about improving things of that kind.

Cross Int. 87. Now, if you brought the sketch to the shop to show to somebody, in order to demonstrate to them a construction which you had devised, why didn't you bring a more perfect sketch, instead of an imperfect one?

A. Mr. Filley showed me a sketch that he had, and I showed him this at the same time, the time he showed his'n.

Cross Int. 88. Then the occasion of your showing Mr. Filley this sketch was the fact that he showed you one?

A. Well, I don't remember about that; I don't know about that; I can't tell, I am sure; but then it is common between us to make sketches and show sketches, and give ideas, etc.

Cross Int. 89. Then the occasion of Mr. Filley showing you the sketch was the occasion of your showing him your sketch?

A. No, sir; I don't think that would be the case.

Cross Int. 90. They occurred on the same day, did they not?

A. Yes, sir; I believe they did.

Cross Int. 91. How long before you showed him the sketch, as you state, had you made it?

A. Well, I should think it must have been eight or nine days, I don't remember exactly.

Cross Int. 92. Was this sketch, Exhibit L, made prior to that stove being brought here from Chicago?

A. No, sir; it was not made prior.

Cross Int. 93. Prior to that stove being brought from Chicago, you had never made any sketch in regard to this construction, had you?

299 A. Positive construction, no, sir.

Cross Int. 94. What do you mean by positive construction?

A. I mean exactly that thing that is on the back end of the stove, a sheet flue under the bottom, and the general principle of the arrangement.

Cross Int. 95. Had you, prior to that stove being brought here from

Chicago, made any sketch from which a pattern-maker could have made patterns for this particular construction?

A. Not for this particular construction; no, sir.

Cross Int. 96. Then this sketch, Exhibit L, was made after the stove was brought here from Chicago, and was drawn out from the fact that Mr. Filley desired to change the construction of that stove?

A. No, sir; I don't think that drew it out. It was a common thing for us—that is Mr. Filley brought the stove there and it stood in the shop, and the principles of heating were talked over among the men, as it usually is, and this sketch was made. Whether it was before Mr. Filley's—before I said that to Mr. Filley or not, I can't say.

Cross Int. 97. What was that stove brought to the shop for?

A. It was brought to the shop to be made in that exact form. I understood Mr. Filley said he had procured a royalty from these parties, Bussey & McLeod.

Cross Int. 98. How long after that stove was brought to the shop was anything said by Mr. Filley as to his dissatisfaction as to the construction of it?

A. Well, I think it must have been some time—I can't tell now; I think it was a number of days, perhaps a week or two, I should think
it was. It stood there some time all mounted, and at the time this
300 thing was spoken of we dismounted part of it, but the exact number of days I can't tell, but it was there some time.

Cross Int. 99. Prior to Mr. Filley's expressing dissatisfaction with the construction of that stove, had you suggested to him that it was imperfect?

A. I think I had; yes, sir, I think I done so before we took it apart.

Cross Int. 100. Then I understand you to say when Mr. Filley states that the defect in this stove was one which he discovered and wished to remedy he is mistaken; that the defect was in fact discovered by you and suggested to him?

A. No, sir; I don't think you could understand that at all, because I didn't say that; it was not detected by me and understood by him. I don't think that is the case. I don't think Mr. Filley thought it was perfect at any time. I don't think he did. He stated it was not perfect, but when he said it I cannot tell. I am sure that we all endeavored to do our best and perfect these things that are brought to the shop.

Cross Int. 101. As between you and Mr. Filley, who first suggested that the Bussey construction was an imperfect one, and should be improved upon?

A. Well, I can't tell about that; perhaps Mr. Filley did. I don't think either of us liked the construction of it.

Cross Int. 102. Isn't it a matter of fact that Mr. Filley ordered that stove to be taken apart so that its construction might be more carefully examined?

A. Yes, sir.

Cross Int. 103. For what purpose did he give you such directions?

A. It was for the purpose of seeing how it might be improved.
301 I presume it was not taken apart though until after these suggestions were made of heating the entire bottom surface.

Cross Int. 104. Now, can you give me any explanation of why, if this construction was so accurately reduced to a drawing, as shown by Exhibit L, you did not the moment the subject was broached explain to Mr. Filley your idea of the way of remedying this defect?

A. I don't know that I have any way to explain it. It is one of those things that we do not at all times tell all we know about these things. We have been engaged in other patent business, getting out patents for low-down reservoir stoves, as I said before, and it was a custom for me to make drawings at home, and, as it is with most inventors, to keep these things, some of them, to myself.

Cross Int. 105. You were employed by Mr. Filley for the express purpose of making patterns for the construction of this and other stoves, were you not?

A. Making patterns for all stoves; yes, sir.

Cross Int. 106. He consulted you, as his pattern-maker, in regard to the mode of changing the construction of this stove?

A. Yes, sir; yes.

Cross Int. 107. Was it not your duty to tell him any practical mode that you knew of improving that construction?

A. I done so. I told him at the time that he suggested that he wanted it improved, I told him of the sheet-flue under the bottom; I gave him my idea of it.

Cross Int. 108. After you gave him your idea why didn't you show him the drawing, which would have explained the idea perfectly?

A. I don't think I had it with me at the time.

302 Cross Int. 109. Why didn't you tell him you had a drawing, and that you would bring it and show it to him?

A. I don't know but I done so; I am not sure. We often talk those matters over. I can't tell; I am not sure; I may have said so; I usually do.

Cross Int. 110. Why, when you showed him the drawing, did you show him an imperfect one instead of a perfect one?

A. As far as the construction was concerned it is the same; I could explain it just as well; you could hardly call it an imperfect one, although it is reduced in size and perhaps the lines are not quite as straight as that is.

Cross Int. 111. Prior to the stove being brought from Chicago had you conceived of this particular construction?

A. Me and Mr. Little had talked the matter over together in regard to low-down reservoir stoves, and we had spoken of putting the same principle of them on the Satisfaction cooking stove, made by Curtis, on the front end, on the back end of the stove. That had been the subject of conversation between us since 1872, at the time the patent was issued. I think they have one, issued in 1872, that embodies that same principle—a flue over the top and direct draught.

Cross Int. 112. Do I understand you to say this construction covered by the patent now in controversy differs in no wise from the construction of the Satisfaction, except that they are situated at different ends of the stove?

A. No, I would not say that; but it is in principle nearly the same; that is, a person that had seen one might easily conceive the idea of the other.

303 Cross Int. 113. Then you think a person who had seen the construction of the Satisfaction would very readily conceive how the same thing might be applied as is now applied in your patent?

A. Yes, sir; yes, I think so.

Cross Int. 114. You say that you and Mr. Little talked this matter over at the time—of the Satisfaction; what else did you and Little do?

A. Well; we were all talking, talking about stoves and modes of making the best arrangement, but I can't tell exactly.

Cross Int. 115. I suppose you are talking now, always talking about the construction of stoves. Were you talking any more particularly about the construction of stoves involved in this patent than you were about the general construction of cooking stoves?

A. A matter involved in this patent?

Cross Int. 116. Yes.

A. Yes, sir; I think we were being interested in this on the front end; it would be reasonable that our conversation would be more on that particular stove than any other.

Cross Int. 117. Where do you say you made that drawing, Exhibit L?

A. Well, I may have made this in the shop, or I may have made it at home; I can't tell exactly where I made it.

Cross Int. 118. Which is your best impression as to where you made it?

A. I think I made that at home; I am not certain, though it is my best impression.

Cross Int. 119. Is that the first drawing or sketch which embodies this construction ever made by you?

304 A. No, sir; I think not. I have made numerous sketches previous to this time, but I don't know that I ever dated them particular. I have been making sketches of stoves. When Mr. Little spoke of applying the same principle on to the back end of one of a similar arrangement I believe I made a sketch of that.

Cross Int. 120. The sketch of that would not be this sketch, would it?

A. No, sir; it would not be this sketch; of course not.

Cross Int. 121. The sketch of that would not show this construction, would it?

A. It would show this same principle.

Cross Int. 122. What do you mean by the same principle?

A. I mean where the heat is carried under the reservoir and up the back.

Cross Int. 123. Is there any difference in the principle of construction shown in your patent now in controversy and the older patent, of which you have spoken?

A. There is a difference in the construction; yes, sir.

Cross Int. 124. Well, then the adaptation of that older construction, which you say you and Mr. Little conversed about, would not show the details of the construction embodied in the present patent now in controversy?

A. You say the details of construction?

Cross Int. 125. Yes.

A. Yes, I say they would not show it; no, sir.

Cross Int. 126. Then so far as the particulars of the construction which enables you to adapt the older construction to your present patent now in controversy was concerned, this sketch, Exhibit L, is the first one you made?

A. Yes, sir; yes, I believe it is as far as I remember now. I can't tell exactly.

305 Cross Int. 127. You are not willing to state that you ever made any sketch of this special construction prior to Exhibit L, are you?

A. No; I am not willing to state that.

Cross Int. 128. Where do you think that sketch, Exhibit L, was made; you say you are not certain whether at your house or shop?

A. Well, I would not like to express; I can't tell; I had worked a good deal of evenings on one thing and another; I don't know that I could tell.

Cross Int. 129. If it was made at the shop why did you take it away, instead of showing it to Mr. Filley at once?

A. I often make sketches—little sketches—and put them in my pocket to look them over, etc., evenings and at other times.

Cross Int. 130. That is a perfect sketch, isn't it?

A. No, sir; it is not perfect; that is, it is perfect as far as the vertical section is concerned, but there is a transverse section that is not shown on this.

Cross Int. 131. In other words, the sketch is not such a sketch as you would require for a working drawing?

A. Yes, sir.

Cross Int. 132. Except that it is perfect?

A. Yes, sir.

Cross Int. 133. This sketch, you say, was drawn out or was suggested by the want of a change in the Bussey stove; now, if you made that sketch L at the shop while this matter was under discussion why didn't you show it to Mr. Filley?

A. Well, I don't know that I made it at the shop, Mr. Boyd; I don't know that I did; *I don't know that I did;* I wouldn't be willing to say it; I don't know where I made it, but I have an idea I made it at home.

306 Cross Int. 134. If you made it at home, under those circumstances, why didn't you bring it to the shop and show it to Mr. Filley?

A. Well, the stove, as I said before, laid there some time before it was a matter of discussion, or before we got to work at it, and it was hardly time; these things require perfecting before they are submitted.

Cross Int. 135. But you didn't perfect the drawing which you did actually show him, did you?

A. No, sir; not perfected. I gave him the details of it. The drawing I showed Mr. Filley, I would not be certain whether I drew that all right there before him or not. I am not certain about that. Perhaps I did; it was embodying this principle. I believe when he showed me the sketch he had, with the pipe, I believe, in front of the reservoir, against the back end of the stove, I said to him that was used by Paris & Co., or at any rate I had seen a similar stove to that where the heat passed under the corner and up the front, and I gave him the details of mine, with the pipe at the back, I think at the same time. That was in the morning.

Cross Int. 136. If you did show that sketch to Mr. Filley at the time, there would have been no need of further discussion as to the mode of changing this construction, would there?

A. Well, there may have been, sir; I can't tell that, I am sure, whether there would have been any further discussion or not.

Cross Int. 137. This was the construction that was actually adopted, wasn't it?

A. Yes, sir; this was the construction that was actually adopted; yes, sir.

Cross Int. 138. Now, when you showed Mr. Filley a sketch, didn't that sketch include a base-pan, having flue-strips in it?

307 A. No, sir; I don't remember of making any flue-strips in it; I could not represent any in a skeleton sketch.

Cross Int. 139. Suppose you had made a plan view, couldn't you have shown the flue-strips?

A. Yes, sir; I could have shown it that way; yes, sir.

Cross Int. 140. I will ask you the same question I have asked before; if you made it two or three days before you showed this sketch to Mr. Filley, and if this sketch was shown to him, it would take but three days at the outside to make a pattern; now why was so much time wasted before these patterns were finished?

A. Three days to make the patterns?

Cross Int. 141. Yes.

A. Three days to make the drawings?

Cross Int. 142. Yes.

A. Well, there might be other work interfering with it. I believe I said in regard to this sketch it was after the idea being suggested in regard to the heating of the whole bottom surface, it was after that the sketch was shown to Mr. Filley. That is what I said; I didn't state it was three days after that particular sketch was made, after we talked the matter over, and it being suggested to heat the bottom surface only.

Cross Int. 143. How long a time after you showed him this sketch was it before you completed the working drawings for the patterns?

A. Well, I can't tell, sir, how long it was.

Cross Int. 144. Do you know when these working drawings were completed?

A. No, sir; I do not; I could give a general idea when they were completed.

Cross Int. 145. What is your general idea?

A. I believe in December; I should think they may have been completed by the 10th or 12th, perhaps later.

308 Cross Int. 146. When did you make the castings from the iron patterns?

A. I don't know that I could say about that, not having connection with the foundry at all.

Cross Int. 147. Do you know when the iron patterns were taken off from the wood?

A. I think in February, 1873.

Cross Int. 148. Now, when Mr. Filley showed you this sketch didn't he ask you to make a more perfect sketch of his sketch?

A. No, sir; not at that time; he did not.

Cross Int. 149. Did he afterwards?

A. Yes; several days afterwards he asked me to make a sketch embodying this principle I have shown, a more perfect sketch.

Cross Int. 150. Didn't he ask you to take his sketch and make a more perfect sketch of his?

A. A more perfect sketch of his?

Cross Int. 151. Yes.

A. I don't remember it, sir; I don't remember it.

Cross Int. 152. What did that sketch he showed you indicate?

A. Well, it was a pan carried part of the way under the reservoir, the front part of the reservoir; I should think it could not have been half way. I didn't think there was any conflict between that and ours. I could not see it. I think we talked of the state of the art at that time. It was an entirely different arrangement, and might have been the subject of a separate patent.

Cross Int. 153. Your knowledge of the state of the art has led you to say that the reservoir having a base-pan covering this whole bottom was not old at that time?

A. Well, the low-down reservoir——

309 Cross Int. 154. The low-down reservoir?

A. Yes. At that time I think that I had no knowledge that it was old at that time.

Cross Int. 155. You never heard of the Spalding patent, did you?

A. Yes, I have heard of the Spalding patent; certainly I have.

Cross Int. 156. Do you remember what that construction is?

A. I can't state exactly now. I believe I have seen sketches.

Cross Int. 157. Do you remember whether that base-pan covers the whole of the bottom of the reservoir or not?

A. I am not certain. I think it is encased in a reservoir, however, that has flue-strips in the base-pan.

Cross Int. 158. If it is encased in the reservoir the base-pan would cover the whole of the bottom of the reservoir, wouldn't it?

A. I wouldn't term it a base-pan. It would be a flue partition with flue-strips in it. Several are made that way—Wilkinson's for one, and Paris & Co.'s another, and I have seen others, and by a very slight investigation I could bring to my memory others, but I didn't prepare myself.

Cross Int. 159. Then I understand you to say that the sketch shown to you by Mr. Filley, in your opinion, was not the same construction as exhibited in the sketch which you showed to him?

A. Yes; that is my opinion.

Cross Int. 160. They were two different constructions?

A. Two different constructions; yes, sir.

Cross Int. 161. Would you recognize that sketch if you saw it?

310 A. I think I should, sir, yes, sir; that is I should recognize a similar one.

Cross Int. 162. Please look at the sketch now marked "Defendant's Exhibit, Filley's Sketch," and say whether that corresponds to the sketch shown you by Mr. Filley at the time of which you have spoken.

A. Yes, sir; I believe that is the sketch.

Cross Int. 163. Then the sketch you showed to Mr. Filley at the time of his exhibiting this sketch, "Filley's sketch," to you was a different construction from the construction shown in the "Filley sketch?"

A. Yes, sir; yes, sir; that is my opinion of it to the best of my knowledge.

Cross Int. 164. Well, now, can you tell how long it was after you began to work upon the change in the construction of this stove before you showed that sketch to Mr. Filley?

A. We hadn't worked any on the construction of the stove.

Cross Int. 165. How long after you began to discuss the change was it before you showed the sketch of which you have spoken to Mr. Filley, and, if you can, fix as near as possible the time in the month and the month?

A. Well, I can't state that; I don't remember. It was some time in November though. It must have been perhaps the middle of the month, but the stove had been there some time before it was taken apart, before there had been a general discussion. I don't think Mr. Filley thought enough of that idea to engage much in its merits immediately. I know that the stove stood there some time before the conversation was had in regard to these changes.

311 Re-examination by CHARLES J. HUNT, Esq.

Int. 13. I wish to ask if the Excelsior Manufacturing Company made an arrangement to buy these patents in suit; and, if so, what that arrangement was?

A. Do you mean to make an arrangement with us in regard to the purchase?

Int. 14. Yes, sir.

A. Yes, sir; there was some negotiation in regard to the purchase of them. Yes, let us see. There was two or three plans spoken of and submitted. Mr. Filley requested me to have the papers made out as to the way we would propose to sell them, and I done so and had the papers made out by Mr. Eccleo, a lawyer here. The subject of these papers were——

(Counsel for defendants objects to the contents of the papers without they are produced.)

A. I can get those papers. I believe I have them somewhere. The idea was——

(Counsel for defendants objects, as the witness says he has the papers.)

The first proposition was that Mr. Filley should have an interest in our invention, one-third, and that a royalty should be paid of twenty-five cents on each stove by the Excelsior Manufacturing Co., that is, that royalty should be equally divided, twenty-five cents to each person, and that he should defend the suits if any were brought by outside parties. The second arrangement was, I believe, that he should pay us $10,000 for the patents in a farm; one was that it should be some land—lots on Page avenue, to be valued at $8,500—the balance in cash; he to assume the expense of obtaining our patents, that is, he agree to pay that. The 312 other was that we should have time to consider whether we would accept that or some land in the country; I believe that is it.

Int. 15. What was the result of this negotiation?

A. Well, the result was that after nearly the expiration of the time Mr. Filley refused to entertain the purchase. In connection with that there were no papers drawn up.

Recross-examination by S. S. BOYD, Esq.:

Cross Int. 166. You don't say these papers were signed by Mr. Filley, do you?

A. No, sir; they were not signed by Mr. Filley.

Cross Int. 167. It was simply a proposition made by you to him as to the use of these patents?

A. Yes, sir.

Cross Int. 168. No agreement ever was entered into, was there?

A. No, sir; no agreement ever entered into.

Cross Int. 169. When Mr. Filley refused to entertain that proposition what reason did he give?

A. Well, he said—I think he said that the—I don't know that I can tell exactly the wording, but the general idea of it would be that he refused to consummate the purchase from the fact that it would destroy that feeling that was necessary between the employer and the employee in the capacity in which we were acting, "and in an invention in which I claim as much interest as yourself." That was about the substance of the correspondence, I think.

Cross Int. 170. But he claimed to you, didn't he, that this was his invention?

A. Yes, sir—no sir, he didn't claim that he was the entire in-
313 ventor of that, that I know of. But he did claim some time—I don't remember exactly when it was—after we had made the application that he thought he was the inventor, or partially the inventor, of that invention.

Cross Int. 171. Didn't he tell you he was going to apply for a patent for this invention, and you thereupon informed him that you had already made application?

A. Yes, sir.

Cross Int. 172. Didn't he then say to you, "You are not the inventor of this?"

A. No, sir; I don't think he did.

Cross Int. 173. What did he say?

A. He remarked, "I thought I had that; I thought that was mine." Says I, "Mr. Filley, if there is any part you claim I wish you to mention it." "Well," says he, "I don't know that there is any"—something of that kind—"any particular part;" I remember those words distinctly—"any particular part."

Cross Int. 174. Then he never told you you were not the inventor of it?

A. No, sir; he never told me, that I can remember, that I was not the inventor.

Cross Int. 175. Then why did he refuse to enter into this negotiation, because, as you say, he said he was the inventor of it?

A. No, sir, he said, "wherein I have an equal interest with yourselves," is the wording of his letter, I believe.

Cross Int. 176. You are speaking of a letter, are you?

A. Yes, I believe there is a letter in existence somewhere.

Cross Int. 177. Is this you have stated as a conversation part of the contents of a letter?

314 A. Yes, sir; I believe so—I wouldn't be certain—to Mr. Little perhaps. I think he must have had it. I believe it was the subject of a letter. It was sent to Mr. Little, and I remember of his reading it to me or whether I read it myself. I believe I read it myself.

Cross Int. 178. Where is that letter now?

A. I don't know that I can produce it. I don't know that I have it.

Cross Int. 179. Where is it?

A. He may have it—Mr. Little. It was addressed to him. I think likely he must have had it.

All this testimony in regard to the contents of the letter objected to without the letter is produced or its absence accounted for.)

Cross Int. 180. You are directly interested, are you not, in the success of the present suit?

A. No, sir; I don't know that I am interested in it. I came here to tell the truth to the best of my knowledge. I was subpœnaed for the purpose. I don't know that I am any more interested than that.

Cross Int. 181. Does not the royalty that you are to receive for the sale of this patent of Bussey, McLeod & Co. depend upon the success of this suit?

A. Is it necessary to answer that question, or is it really a matter——

Cross Int. 182. It is very necessary.

A. Is that part of the suit, or simply *to* private question?

Counsel for Complainant. The agreement is in evidence. We object to it, as the agreement speaks for itself, but you can answer your idea about it.

Cross Int. 183. In the event this suit is decided on the ground that your patents are invalid, will you receive any royalty from Bussey, McLeod & Co.?

315 A. I don't think it is necessary for me to answer these questions; not being part of the suit it is not pertinent to the case, none whatever; this simply being an arrangement, these gentlemen may not be willing that I should submit it entirely.

Cross Int. 184. If this suit is decided against the complainants, and your patents are held to be invalid, what royalty will you receive from Bussey, McLeod & Co. hereafter?

A. That is a part of the same question; is it necessary I should——

Complainants' Counsel. You can answer.

Witness. Well, if it is with your consent I shall of course tell the whole arrangement.

Complainants' Counsel. Certainly.

Witness. I didn't know whether you would like the proceeding or not. I will tell the whole arrangement. Shall I?

Counsel. I wish you to answer the question.

A. Well, we didn't receive it in the shape of a royalty. That was not the agreement—in the shape of a royalty.

Cross Int. 185. In the event these patentsare decided to be invalid, will you receive any more money from Bussey, McLeod & Co.?

A. Well, now let me see. I can't tell that unless I read the subject of the agreement. Did Mr. Little bring that?

Cross Int. 186. Do you not, as a matter of fact, know that upon the way in which this suit is decided depends the future moneys that you will receive from Bussey, McLeod & Co. for this patent?

A. No, I don't know that this express suit—I don't know that.

316 Cross Int. 187. Don't you know if these patents are held to be invalid in any suit that thereafter you receive no more moneys from Bussey, McLeod & Co.?

A. I can't tell unless I should read. It is a long time. I don't know that I have looked at that since we made the arrangement. I can't tell how that would be, I am sure.

Cross Int. 188. Then I understand you to say, without looking at the original agreement, you do not now know what your rights are as to the future payments from Bussey, McLeod & Co.?

A. I could give a general idea what it would be, I think; I could give you my idea of it, but I don't know that I could state positively about the matter.

Cross Int. 189. My question is, do you not know that if these patents are decided to be invalid you receive no more moneys from Bussey, McLeod & Co.?

A. Well, I should judge that would be the case. I cannot state positively, but I should judge that would be the case. If I could read the papers over and get the exact wording I might possibly tell or judge by that what the rule would be.

Cross Int. 190. Then your recollection is not sufficiently good to enable you to say in regard to a matter of such importance to you personally as this what would be the effect on the future moneys you are to receive of a decision declaring these patents invalid?

A. It would not be so much my memory at fault as it is my idea of law in the matter, the legality of the rule that is presented. It is sometimes the case where patents are purchased to be paid in instalments that it might be so worded that you should not receive money under any circumstance
or that you should receive it under any circumstances. I don't
317 know how that would be, I am sure. I believe that would be the
subject of a legal investigation.

(Paper referred to offered in evidence, and marked "Complainants' Exhibit M.")

(Signed) DAVID H. NATION.

HERMAN CLOW, being produced and sworn as a witness on the part of the complainants, deposeth and saith:

Direct examination by CHARLES J. HUNT, Esq.:

Int. 1. What is your name, age, residence, and occupation?

A. My name is Herman Clow; I am thirty-three years of age; reside in St. Louis; my occupation is pattern maker.

Int. 2. Look at this drawing, marked "Complainants' Exhibit L," and state when you first saw it, and who showed it to you.

A. Well, I first saw it somewhere, I think, in the forepart of November, 1872. It was shown to me by Mr. Nation.

Int. 3. How do you identify it as the one you saw at that time?

A. Well, my name is on it. I remember signing it, and the arrangement of the reservoir.

Int. 4. When did you put the date on?

A. That was put on some time the latter part of November.

Int. 5. Shortly after you saw it?

A. Some two weeks, I think, as near as I can get at it; not exactly.

Int. 6. Did you put it there?

318 A. Yes, sir.

Int. 7. Do you understand what the drawing represents?

A. Yes, sir.

Int. 8. State, as far as your understanding of it, what it is.

A. Well, it is to heat the bottom of the reservoir; that is what we call the low reservoir.

Int. 9. Will you describe the course of the products of combustion from the time they leave the fire chamber until they reach the exit flue, and on what sides of the reservoir they pass?

A. It passed from the fire-box along under the top down the back side flues, and in front through the side bottom flues where they join and go back in the middle bottom flue, up the middle back flue to an opening in the back and under the reservoir, and up the back of the reservoir on this L.

Int. 10. Who showed that to you?

A. Mr. Nation showed it to me at first.

Int. 11. Did he claim it to be his design or sketch?

A. Yes, sir.

Cross-examination by S. S. Boyd, Esq.:

Cross Int. 1. What did Mr. Nation say to you when he brought that sketch to you, if anything, in regard to Mr. Filley?

A. He said nothing in regard to Mr. Filley.

Cross Int. 2. What did he say he brought the sketch to you for?

A. He didn't say what for. We were talking about the stove that was in the shop—the Bussey stove, as it was called. We were talking about that—a few remarks—and he said that he had a plan, and showed me this, and explained to me how it worked, and I understood it.

319 Cross Int. 3. How long had the Bussey stove been in the shop at the time he showed this to you?

A. Well; that I don't know.

Cross Int. 4. Some time?

A. Yes, sir; it might have been a week or more; I can't tell.

Cross Int. 5. What did he want you to sign the drawing for?

A. It was Mr. Little that first mentioned that, and during the conversation of Mr. Little with Mr. Nation he remarked so, that to secure this from an interference with the "Satisfaction." That was the idea I got at the time. They had about the same thing on the "Satisfaction," and they wanted to get a patent so that would not be interfered with, the patent of this.

Cross Int. 6. Did you ever see a sketch made by Mr. Filley?

A. No, sir; not that I remember of.

Cross Int. 7. How do you fix upon that date upon the drawing?

A. Well; it was some time in the latter part of November when I was called on to sign this, and they wanted me to sign it as having seen it on the 8th; I told them I was not certain of that, the exact date; "Well," they said, "That was the date," and wanted me to sign it as about that time, and I did so, though I didn't mention it.

Cross Int. 8. Well, are you able to say that you did see it on the 8th of November?

A. Not exactly on the 8th; no, sir; somewhere in the forepart of the month, as near as I could remember then.

Cross Int. 9. Well, before you saw this drawing, had a construction similar to that been explained to you in regard to the Bussey stove?

A. No, sir.

320 Cross Int. 10. Were you engaged there as a pattern maker in the same room with Nation?

A. Yes, sir.

Cross Int. 11. How long was that Bussey stove there under discussion, the construction of it?

A. Somewhere near three or four weeks; I can't tell exactly; quite a while.

Cross Int. 12. Mr. Filley was there every day, was he?

A. About every day.

Cross Int. 13. Did you hear any discussion going on between him and Mr. Nation as to how to change this Bussey stove?

A. No, sir; nothing, only Mr. Filley remarked he wanted the bottom of the reservoir heated.

Cross Int. 14. How soon was that after the reservoir was brought there?

A. I can't tell when I first heard that; I heard it a good many times.

Cross Int. 15. Did you hear that a good many times before any way was suggested of heating that bottom?

A. Yes, sir.

Cross Int. 16. Then, after Mr. Filley said he wanted the bottom of the reservoir heated it was some time before they hit on a plan by which to heat it, was it?

A. Yes, sir.

Cross Int. 17. Prior to this drawing being shown you, did Mr. Nation ever explain to you how the change was to be made?

A. No, sir.

Cross Int. 18. Did you know how the change was to be made before you saw that?

A. No, sir.

321 Cross Int. 19. After they decided upon a plan for making the change about how long was it before the pattern maker's work was done on that stove?

A. Well, I don't know. I could not possibly tell that.

Cross Int. 20. How long would it take a pattern-maker to complete his part of the work for that change?

A. You mean for a single man to do the whole of it?

Cross Int. 21. I mean your shop there, to do as you usually do your work.

A. It would depend on the number of men working on it.

Cross Int. 22. How long would it take a single man to make drawings and complete the patterns for the construction there shown?

A. Well, it would take a single man from one to three months, I should think, to make the necessary changes.

Cross Int. 23. Were you two or three months about this?

A. I don't know.

Cross Int. 24. Do you know when they were completed?

A. No, sir.

Cross Int. 25. After this drawing was shown to you by Mr. Nation what was done in relation to the stove?

A. Why, the old stove was changed in this way, so that the fire would strike the reservoir in this way.

Cross Int. 26. Was the change commenced at once?

A. After I saw this?

Cross Int. 27. Yes.

A. No, sir, I think not.

Cross Int. 28. Why not?

A. Well, the drawings were not ready. The drawings would have to be made to a scale.

322 Cross Int. 29. By having the change made at once I mean were the drawings commenced and the necessary steps taken?

A. I don't know that; I think they were commenced soon after.

(Signed) H. E. CLOW.

Counsel for complainants announces the testimony closed on the part of the complainants.

(Here follows diagram marked page 323.)

324 COMPLAINANTS' EXHIBIT F.—H. S. SPRAGUE, *Notary Public.*

No. 142717. David H. Nation—reservoir cooking stoves.
No. 142931. David H. Nation & Ezekiel C. Little—reserv. cooking stove.
No. 142932. Same same same.
No. 142933. Same same same.
No. 142934. Same same same.

In consideration of one dollar in hand paid, the receipt of which is acknowledged, from Esek Bussey and Charles A. McLeod, of Troy, N. Y., we hereby assign, sell, and set over to Esek Bussey and Chas. A. McLeod, all our right, title, and interest in the following patents, viz: No. 142717, dated September 9, 1873; No. 142933, dated September 16, 1873; No. 142934, dated September 16, 1873; No. 142932, dated September 16, 1873; No. 142931, dated September 16, 1873, for improvement in reservoir cooking stoves, and patent No. 142935, dated September 16, 1873, for improvement in cooking stoves. The same to be held and enjoyed as fully by said Esek Bussey and Charles A. McLeod as we would have held and enjoyed same had this assignment not been made.

Witness our hands the second day of June, 1874.

DAVID H. NATION.
EZEKIEL C. LITTLE.

Received for record June 5, 1874, and recorded in liber Y 17, page 362, of transfers of patents.

In testimony whereof I have caused the seal of the Patent Office to be hereunto affixed.

[L. S.] J. M. THACHER,
Acting Commissioner.

Ex'd: F. C. Y.

325 COMP'TS' EXHIBIT I.—L. L. WALBRIDGE, *Special Examiner.*

Whereas an interference has been declared by the Commissioner of Patents between the application of Franklin Clement, Charles H. Buck, assignee, for reservoir cooking stove, and is now pending, and the letters patent granted David H. Nation and Ezekiel C. Little, 6th of May, 1873, Nos.

138682, 142933 and 142934, Sept. 16, 1873, and those granted said Nation 9th of Sept., 1873, No. 142717: Now, therefore, in order to settle said matter amicably and save the expense of further litigation, and in consideration of the license under said aforementioned letters patent granted this day to said Buck by said Little and Nation, the said Clement and Buck hereby agree to withdraw from said interference, make no further effort to procure the said letters patent, and to claim no rights now or at any time hereafter antagonistic to said Little and Nation by reason of any pretended or actual title he or they may or might have had to the invention set forth in said Clement application by reason of priority or otherwise. And should further investigation establish the fact that said Clement was the prior inventor of and entitled to letters patent for the device shown and claimed in his said application, then the said Clement and Buck agree to take such steps and execute such writings, at the cost of the said Little and Nation, as may be deemed necessary to procure and vest in said Little and Nation all rights to such invention, saving and excepting the right of the said Buck to manufacture, either alone or in asso-
326 ciation with others, at a single establishment in the county of St. Louis, Missouri, and to sell anywhere in the United States or the Territories thereof, such invention or stoves embodying the same, during the life of any letters patent that may be granted therefor and during the extension of the same.

In witness whereof the said parties have hereto set their hands in duplicate this 17th day of April, A. D. 1873.

E. C. LITTLE.
D. H. NATION.
CHARLES H. BUCK.
FRANK CLEMENTS.

Witnesses:
SAMUEL S. BOYD.
CHAS. D. MOODY.

COMP'TS' EXHIBIT K.—L. L. WALBRIDGE, *Special Examiner.*

Agreement made this 3d day of June, 1874, between Esek Bussey and Charles A. McLeod, of Troy, N. Y., parties of the first part, and the Excelsior Manufacturing Co. of St. Louis, parties of the second part.

Whereas said parties of the first part have licensed said parties of the second part to manufacture improvements in cooking stoves as described in reissued letters patent dated June 3, 1873, No. 5435; in letters patent dated February 8, 1870, No. 99529; in letters patent dated February 14, 1871, No. 111811; patents No. 142934, 142933, 142717, 142932, 142931, 142935, owned by said parties of the first part:

327 In consideration of the fulfillment of the conditions of said license by said parties of the second part the parties of the first part hereby guarantee to defend the said parties of the second part should any suit be brought against them for using any or all of said patents, and pay all damages that may be assessed against said parties of the second part by reason of constructing cooking stoves as described in said patents (not to exceed the amount of royalties the parties of the second part may have paid the parties of the first part upon stoves upon which such damages are

assessed;) provided said party of the second part shall make such stoves in the manner described in said patents, and not otherwise.

In consideration of said guarantee by the said parties of the first part the said parties of the second part hereby agree to make no low-reservoir cooking stoves except under said license, and accept or sign no license or agreement recognizing other reservoir patents without the written consent of said parties of the first part; and the parties of the second part also agree to put the date of the patents upon their stoves. The parties of the second part agree to transfer to the attorneys of parties of first part the exclusive control of any suit that may be brought against them as aforesaid, and notify parties of the first part within ten days after such suit is commenced. In case the parties of the second part fail to pay license fees as agreed, or fail to perform any of their aforesaid agreements, then said parties of the first part are released from this guarantee and agreement.

The parties of the first part reserve the right to cancel this agreement upon any first day of January during the continuance of said licenses;
but such cancellation shall not release the parties of the first part
328 from this guarantee upon any stoves (either made or sold) manufactured under said patents previous to giving notice of such cancellation.

And if parties of second part desire at the same time to cancel the said license, it is agreed they may do so by paying the license fees upon all stoves they may have made under said license up to the date of said cancellation.

ESEK BUSSEY,
CHAS. A. McLEOD,
G. F. FILLEY,
President of the Excelsior M'f'g Co.

This indenture, made this 3d day of June, 1874, between Esek Bussey and Charles A. McLeod, of the city of Troy, in the county of Rensselaer, State of New York, parties of the first part, and the Excelsior M'f'g Co. of St. Louis, Mo., parties of the second part, witnesseth:

That whereas letters patent of the United States for improved cooking stoves were granted to Esek Bussey Dec. 5, 1865, and reissued June 3, 1873 (No. 5435), and also February 8, 1870 (No. 99529), and also February 14, 1871 (No. 111811); and whereas one undivided half of said letters patent and reissue have been assigned to Charles A. McLeod; and whereas the parties of the second part are desirous of manufacturing cooking stoves containing wholly or partly said patented improvements: Now, therefore, the parties hereto covenant to and with each other as follows; and whereas parties of the first part own patents Nos. 142934, 142933, 142717, 142932, 142931, 142935:

329 1st. The parties of the first part license and empower the parties of the second part to manufacture, subject to conditions hereinafter named, at St. Louis, and in no other place or places, to the end of the term for which said letters patent and reissue were granted, cooking stoves containing said patented improvements, and to sell the same in the United States.

2d. The parties of the second part covenant to make to the parties of the first part a verified statement, upon the first day of January of each year, of all the cooking stoves containing any or all of said patented improvements manufactured and sold by them during the previous twelve months ending December 31st, and after July 1, 1874.

3d. The parties of the second part covenant to pay to said parties of the first part, or their assigns, upon the first day of January of each year, a license fee of one dollar upon every other cooking stove sold by said parties of the second part during the preceding twelve months ending December 31st containing wholly or partly said patented improvements, provided that if said fee be paid upon the days provided herein for annual returns, or within ten days thereafter, a discount of fifty per cent. shall be made from said fee for prompt payment.

4th. In case during any year ending December 31st in which said stoves were made and sold said fifty per cent. of the license fees upon said patented stoves sold should not amount to five hundred dollars, then the parties of the second part covenant to pay to said parties of the first part five hundred dollars, in lieu of said license fee for said twelve months; said
parties of the second part agree to accept the draft of said parties
330 of the first part August 1st of each year, at six months, without interest, for said sum of five hundred dollars.

5th. Upon the failure of the party of the second part to make returns or to make payment of license fees as herein provided for thirty days after the first day of January of each year, the parties of the first part may terminate this license by serving a written notice upon the parties of the second part, but the parties of the second part shall not thereby be discharged from any liability to the parties of the first part for any sum of money due at the time of service of said notice.

In witness whereof the parties above named have hereunto set their hands and affixed their seals this day and year first above written.

ESEK BUSSEY. [L. S.]
CHAS. A. McLEOD. [L. S.]
G. F. FILLEY, [L. S.]
President of the Excelsior M'f'g Co.

331 COMP'TS, EXHIBIT M.—L. L. WALBRIDGE, *special examiner.*

Agreement made this second day of June, 1874, between Bussey & McLeod, of Troy, N. Y., parties of the first part, and David H. Nation and E. C. Little, of Saint Louis, Mo., parties of the second part, witnesseth:

Whereas parties of the second part have this day sold and assigned said parties of the first part the following patents, viz: Nos. 142717, 142935, 142933, 142934, 142932, and 142931: In consideration therefor the parties of the first part agree to pay said parties of the second part one-half of all royalties they may receive by reason of any one making low-reservoir cooking stoves having the exit pipe behind the reservoir, within ten days after said parties of the first part receive said royalties, up to the amount of ten thousand dollars, ($10,000), one-half said ten thousand dollars to be paid to David H. Nation, his heirs and assignees, and one-half to E. C. Little, his heirs and assignees. When said parties of second part receive ten thousand dollars as aforesaid, then said parties of first part become sole owners of said patents. The parties of the first part agree to use their endeavors to sell the right to use said patents on same terms as they grant licenses to use patents heretofore owned by said parties of the first part.

332 In case said parties of the first part are obliged to guarantee those using said patents, and are unable to maintain their guarantees, and are obliged to refund the royalties received for using said patents, then the parties of the second part agree to pay said parties of the first part one-half of the amount of royalties refunded, not to exceed the amount said parties of second part have received.

Witness our hands the day and year above written.

BUSSEY & McLEOD.
D. H. NATION.
E. C. LITTLE.

333, 334 United States circuit court, eastern district of Missouri.

ESEK BUSSEY AND CHARLES A. McLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY of Saint Louis, defendant.
} In equity. No. 1039.

DEFENDANT'S RECORD.

Sprague & Hunt, complainants' counsel; Sam'l S. Boyd, defendant's counsel.

335 United States circuit court, eastern district of Missouri.

Testimony.

ESEK BUSSEY ET AL., COMPLAINANTS,
vs.
EXCELSIOR MANUFACTURING CO., DEFENDANT.
} In equity. No. 1039.

Testimony taken on the part of the defendant under the sixty-seventh rule of practice, as amended for the courts of equity of the United States, by L. L. Walbridge, special examiner, duly appointed by the said court to take depositions in said cause, Thursday, May 2d, 1878, at the office of Samuel S. Boyd, esq., No. 506 Olive street, St. Louis, Mo. Present, Charles J. Hunt, counsel for complainants, and Samuel S. Boyd, counsel for defendant.

Defendant's counsel first offers in evidence a certified copy of the letters patent for cooking stoves granted to Davis and Lord on the 23d day of November, 1829, marked "Defendant's Exhibit No. 1."

Defendant's counsel next offers in evidence a certified copy of letters patent granted James Barron on the 6th day of November, 1837, No. 422, for improvement in galley on cooking stoves for ships of war, marked "Defendant's Exhibit No. 2."

336 Defendant's counsel next offers in evidence a certified copy of letters patent granted Peter Getz, January 11th, 1840, No. 1469, marked "Defendant's Exhibit No. 3," for improvement in the construction of steam apparatus for cooking stoves.

Defendant's counsel next offers a certified copy of letters patent granted P. P. Stewart, January 18th, 1859, No. 22681, for improvement in cooking stoves, marked "Defendant's Exhibit No. 4."

Defendant's counsel next offers a certified copy of letters patent granted Daniel E. Paris, assignee for S. B. Spalding, being reissue 2291, dated June 19th, 1866, for improvement in cooking stoves, marked "Defendant's Exhibit No. 5."

Defendant's counsel offers in evidence a certified copy of letters patent granted Esek Bussey, July 17th, 1866, and numbered 56488, for boiler for cooking stove, marked "Defendant's Exhibit No. 6."

Defendant's counsel offers a certified copy of English letters patent granted John Barlow, July 2d, 1816, numbered 4444, for cooking apparatus, marked "Defendant's Exhibit No. 7."

Defendant's counsel next offers a certified copy of letters patent granted J. B. Wilkinson, as assignee of R. M. Hermance, for cooking stoves, dated April 26th, 1870, No. 102462, marked "Defendant's Exhibit No. 8."

Defendant's counsel next offers a certified copy of letters patent granted Joel Tiffany, August 17th, 1869, No. 93771, for improvement in combined water-tank and warming closet, marked "Defendant's Exhibit No. 9."

Defendant's counsel next offers in evidence a certified copy of letters patent granted Daniel E. Paris, April 11th, 1871, No. 113556, for improvement in cooking stove, marked "Defendant's Exhibit No. 10."

Defendant's counsel next offers in evidence a certified copy of letters patent granted W. L. McDonell, May 16th, 1871, No. 114838, for improvement in cooking stoves, marked "Defendant's Exhibit No. 11."

Defendant's counsel next offers in evidence a certified copy of letters patent granted W. U. More, November 16th, 1869, No. 96826, for reservoir cooking stoves, marked "Defendant's Exhibit No. 12."

337 Defendant's counsel next offers in evidence a certified copy of letters patent granted James R. Hyde, June 10th, 1862, No. 35564, for improvement in stoves, marked "Defendant's Exhibit No. 13."

Defendant's counsel next offers in evidence a certified copy of letters patent granted James R. Hyde, March 24th, 1863, No. 37966, for improvement in stoves, marked "Defendant's Exhibit No. 14."

Defendant's counsel next offers in evidence a certified copy of letters patent granted Caleb Slade, November 11th, 1837, No. 457, for improvement in stoves, grates, boilers, and ovens, marked "Defendant's Exhibit No. 15."

Defendant's counsel next offers in evidence a certified copy of letters patent granted J. H. and T. S. Mitchell, December 21st, 1869, No. 98086, for cooking stoves, marked "Defendant's Exhibis No. 16."

Defendant's counsel next offers in evidence a certified copy of letters patent granted William J. Keep, December 12st, 1871, No. 121876, for improvement in cooking stoves, marked "Defendant's Exhibit No. 17."

Defendant's counsel next offers a certified copy of reissue of letters patent granted George H. Phillips, December 27th, 1870, No. 4219, for improvement in reservoir cooking stoves, marked "Defendant's Exhibit No. 18."

Defendant's counsel next offers in evidence a certified copy of letters patent granted to Chamberlain and Crowley, February 7th, 1871, No. 111517, for improvement in cooking stoves, marked "Defendant's Exhibit No. 19."

Defendant's counsel next offers in evidence a certified duplicate of the model in the matter of the letters patent granted Esek Bussey, July 24th, 1866, No. 56525, reissued February 1st, 1870, No. 3815, marked "Defendant's Exhibit Bussey Model."

Defendant's counsel now offers in evidence a certified duplicate of the model in the matter of the letters patent granted Joel Tiffany, August 17th, 1869, No. 93771, marked "Defendant's Exhibit Tiffany model."

338 B. F. CLEMENT, being produced and sworn as a witness on the part of the defendant, deposeth and saith:

Direct examination by S. S. BOYD, Esq.:

Int. 1. State you' age, residence, and occupation.

A. Residence, St. Louis; am superintendent at the Buck Stove Works.

Int. 2. How long have you been engaged in the business of manufacturing stoves?

A. I have been with Mr. Buck 16 years.

Int. 3. What particular duties have you performed there?

A. I have had charge of the works entirely, for patterns and all the different parts of the manufacturing of stoves; I have had charge of all departments of the stove works.

Int. 4. Please look at the model now shown you, marked "Defendant's Exhibit Buck Stove," and state what it represents.

A. This represents a stove that was made at the Buck Stove Works in 1872, a stove then called the Colorado.

Int. 5. By whom were the patterns for that stove made, and where?

A. By my son, in the pattern shop of the Buck Stove Company.

Int. 6. From what did he make the patterns?

A. He made the attachment, this part of the stove, from an old set of patterns which we had of the Paragon; he altered the stove somewhat and made an extension to it.

Int. 7. By "extension," you mean what?

A. The reservoir and the part in the rear, with the back and part of the top.

Int. 8 From what did he make the patterns of the reservoir and of the closet attachment?

A. From a drawing made by me, or a sketch.

Int. 9. Where is that sketch now?

A. It is not in existence that I know of.

Int. 10. What sort of a sketch was it—an elaborate one?

A. No; it was one so I could understand it; a pattern-maker could
understand how to work on it to give him the length and size
339 that I wanted him to understand, the height of the closet, &c.—just
simply a sketch so that he could work from it. The reason that
that was done was on account of its being an old stove. We hardly ever
make an entire drawing for an old stove. We take the old stove, and
when we want to make an attachment to it we just simply sketch the
alterations so that the pattern-makers will work understandingly from the
tches. There may be different parts of the sketches.

Int. 11. Now, when was that sketch made, as near as you can tell?

A. As near as I can tell, it was made in July or August.

Int. 12. Of what year?

A. 1872.

Int. 13. After he made the patterns in accordance with that sketch, what was done then?

A. We made one stove off it, I think was about all we made, and then we came to the conclusion that the stove would be too fine a stove for a cheap stove. Our object *was* in making this on the Paragon was to make a cheap stove, and the point was with us to put it on a poorer class of stoves, and the consequence was that we dropped that stove and put it onto another stove afterwards.

Int. 14. This attachment was made, you say, on an old stove called the Par'gon?

A. Yes, sir.

Int. 15. Was that same name *name* retained on the new stove?

A. No, sir; it was changed and called the Colorado.

Int. 16. Where is that stove now?

A. I cannot tell. I sent it to the store. The reason it had to be sent to the store before it was entirely finished was the back of the closet and the bottom of the closets were made with sheet-iron, and we intended to save this by having cast-iron plates to cheapen the stove.

Int. 17. When did you last see that stove, the Colorado?

A. I don't recollect when I seen it last; it has been some time. I might have seen it in the store, running up and down through there, without any recollection, but I think about the last time I saw it was when it was sent to the store; I would not be certain. I knew there was such a one at the store. I don't recollect whether I seen it at the store since or not.

340 Int. 18. In what condition was that stove when it was sent to the store, as far as being an operative stove was concerned?

A. As far as being an oper'tive stove is concerned I hardly think it could have been operated. It might have been. I don't think it could. This sheet-iron, that is all it wanted to complete the stove.

Int. 19. A sheet-iron plate for the rear of the warming closet?

A. The rear and the bottom of the warming closet. I think that is all that was wanted.

Int. 20. Then, as far as the heating of the reservoir was concerned, was there anything to done in order to make it an operative stove?

A. Oh, no; only the reservoir.

Int. 21. Now, how was that reservoir attached to the stove?

A. That I don't exactly recollect. There were some alterations made; it was much near the same as this. There were some alterations made in the other stove by attaching—no, it was not attached at all. It was portable same as this—no attachment directly without there was an attachment on the side of the reservoir to keep it from slipping back. I am not certain of that fact, because we altered the stove some little in that manner afterwards. I don't recollect precisely about that.

Int. 22. After that stove was completed was there any other one made with that construction at the Buck Stove Works?

A. I don't think there was. I think we started to make No. 7, and deferred it entirely without finishing it, I think.

Int. 23. On what acco'nt?

A. On account of putting it on another, as I told you—on a more costly stove.

Int. 24. On what stove did you put it afterwards?

A. On the Brilliant and on the Guarantee, with an alteration.

Int. 25. What alteration did you make when you put it on the Brilliant and Guarantee?

A. We put it on the Brilliant in the first place, almost a fac-simile of this model, but we found that the water heated too fast in the reservoir, and consequently we reduced the size of the flue in the base-pan.

Int. 26. Please look at the drawing now shown you, marked
341 "Defendant's Exhibit Buck Drawing," and state how Figure 4,
particularly of the drawing, shows the mode of attachment of that
base-pan to the rear of the stove in the Colorado, of which you have just
spoken.

A. That is, I think, the attachment of the Colorado.

Int. 27. How was it done?

A. By a screw G, held to the back.

Int. 28. In what did that screw work?

A. Through a lug on the back of the stove, on the main back of the stove.

Int. 29. Through a lug on the back plate of the stove?

A. Yes, sir.

Int. 30. What other means of fastening that base-pan on was there?

A. I think it was held apportionately by the sides, that is, a door-frame—what we call a door-frame—going under, holding it in; and they were attached to the side of the stove, or attached to the back of the stove, rather.

Int. 31. Please state whether or not the mode of attaching the base-pan to the rear of the Colorado was such that it could be detached from the back plate of the stove.

A. Yes, sir, it was.

Int. 32. How about the warming closet beneath, whether or not that was attached to the base-pan, or separate and distinct therefrom?

A. It was separate therefrom that is, it was not entirely separate. It could be taken out and leave a portion of the closet standing. In mounting we always mounted up the sides, and dropped the base-pan right in, and then put screws through.

Int. 33. Does Fig. 4 of that drawing shown you correctly represent the mode of attachment of the base-pan to the back plate of the stove?

A. Well, as far as I can see, it does. I can't say positively about all the attachment to it, but I think it does represent it.

Int. 34. The model Buck stove represents the base-pan as attached to
the back plate of the stove, without any means of disconnecting it; in that
respect does it correctly or not represent the Colorado?

342 A. No, sir; it don't correctly represent it at all. That was, I
suppose, put on for the sake of convenience, but I don't know.

Int. 35. In that respect the drawing is the more correct representation of the mode of attachment to the base-pan than the Colorado?

A. Yes, sir.

Int. 36. Can you tell when the Colorado was completed?

A. I cannot tell exactly when it was completed. It must have been completed, to the best of my knowledge, that fall.

Int. 37. In the fall of 1872?

A. The fall of 1872. I have nothing to guide me as to that, only circumstances.

Int. 38. What are those circumstances?

A. The circumstances are, about the usual length of time it requires to make a set of patterns for an attachment of that kind.

Int. 39. Do you remember when your foundry shut down that fall?

A. It was about the middle of December.

Int. 40. Can you tell whether or not the castings of these stoves were completed before you shut down that fall?

A. I cannot, not sure. I think they were, but I have no data to go by.

Int. 41. What data have you which enables you to fix the time when you made these drawings, or when the patterns for the drawings were made?

A. From my books, and the fact of my son working and making a stove, a large heater, called the 20 Fire King, and as quick as he completed those patterns I made the sketches for the Colorado.

Int. 42. When did he complete the patterns for the Fire King?

A. It must have been in June or July, from the fact that we have got the dates of the patterns being moulded in June.

Int. 43. 1872?

A. 1872, June and July.

Int. 44. Have you got those data with you?

A. I have.

Int. 45. What is the book you now produce?

(Witness produces book.)

343 A. It is a time-book for the piece work of the moulders of the Buck Stove Company. It was Buck & Wright then.

Int. 46. Please turn to the entry that you say gives you the data from which to determine when the Fire King pattern was completed.

A. This entry, it appears to be in August. They were made commencing August 14. How much earlier I don't know. Here were patterns, the only patterns we had at that time and the only patterns we were making, made by Ed. Smith; different dates of making them. There is the price paid him, and so on, right through.

Int. 47. This shows when the patterns were finally made for the Fire King, does it?

A. Yes, sir.

Int. 48. What is the date there?

A. The date when this commences is on the 7th of August, 1872. There may be some—I have not looked—forward of this, and probably was. There may be a portion that antedates this. I don't know. I haven't looked farther than this, back.

Int. 49. Do you know whether these were the first patterns of the Fire King that were completed?

A. I don't know that they were the first. There may have been some even prior to this that were completed, and I think probably there were. In fact there must have been some of them completed, but I didn't look further back.

Int. 50. Now, from the entry in that book, showing the date when a set of patterns for the Fire King were completed, can you state how long before these were completed you made this sketch, of which you have spoken, for the attachment of the Colorado?

A. I would state this: I made the sketch in July or August. I am not certain of the date, but I think it was as early as July and not later than August. I am satisfied of that fact.

Int. 51. Have you any memoranda from which to show when the patterns for this Colorado attachment were finished?

A. No, sir; I have not any that I know of to show when the patterns for this Colorado attachment were finished.

344 Int. 52. Why does not that book show when this attachment was completed—of the patterns—the time-book?

A. It would not show it at all in regard to the patterns being finished, for these are iron-working men. Do you mean when the patterns were cast?

Int. 53. Yes.

A. Oh, from the fact when we are taking off anything of the kind, it is a small matter; that we generally put in the hands of somebody that has not any complete day's work, or something of the kind, and they mould it up, and we don't take any account of it. The matter is so small it don't amount to a great deal.

Int. 54. Then the reason that the date when the metal patterns of the Colorado were completed does not appear on your time-book is that it was a small piece of work, and you made no charge for it?

A. That may be one reason, and another may be if I had a day hand at the time, and he would be working by the day, the consequence is no account of the patterns was taken in at all; often made patterns in that way; sometimes had time-work in the fall. Some would be where we had a good deal of odd work to do, plate, etc.; had a day hand working—a moulder that could mould most anything—and it would naturally fall to his lot to make these patterns, and he would only be credited with so many days' work by the time.

Int. 55. Have you looked at your books in regard to the wood patterns to see when the wood patterns of the Colorado were completed?

A. No; there would be no entry of that, from the fact that they all worked by the day; not an entry of any kind for the pattern men. This is something that was done by the piece, that is, that would be done outside of the works.

Int. 56. Then the process you follow there is, first to make your patterns in wood, and then to take them off in iron, and from the iron patterns cast the stove?

A. Yes, sir.

Int. 57. And for the cost of making the wood patterns, it being day-work, you say you kept no account of the charge against the particular pattern?

345 A. None at all.

Int. 58. Do you know when you put this attachment on the Brilliant?

A. It was in 1873. I don't know exactly the dates, but I think, it was early in 1873, probably in the spring of 1873.

Int. 59. Do you mean it was in the spring of 1873 you completed the attachment, or commenced making patterns for the attachment?

A. Commenced making patterns for the attachment, I think, in the winter or spring of 1873.

Int. 60. How did the attachment, as applied to the Brilliant, correspond with or differ from this attachment as applied to the Colorado?

A. Very similar, with the exception of some little minor attachments.

Int. 61. What is your son's name who made the patterns for the Colorado?

A. Judson F. Clement.

Defendants offer in evidence model marked "Buck Stove" and the drawing "Buck Drawing."

Cross-examination by CHARLES J. HUNT, Esq.:

X Int. 1. Mr. Clement, how much did it cost to make wood patterns for the Colorado, with this attachment?

A. That I cannot answer exactly. It didn't cost a great deal. The young man that made them was working as an apprentice, and I cannot state what it cost; probably $100; may be not that much; all the way from $50 to $100. I think we were paying $6 a week, but I have no particular account to go by, without I know exactly the date we finished it.

X Int. 2. Did he make the wood patterns?

A. Yes, sir; he made the wood patterns.

X Int. 3. Was your son that apprentice?

A. Yes, sir.

X Int. 4. How much did it cost to make the wood patterns for the Brilliant?

A. The attachment?

346 X Int. 5. Yes.

A. That I don't recollect. There was some arrangement made in regard to making them, but I don't recollect what; the arrangement was made, and the money was paid at the store for them, and I don't recollect what the price was for the attachment to the Brilliant. They were made by the piece, sir; not at our works at all, although I superintended the making of them.

X Int. 6. How long after the Fire King patterns were made were the patterns made for the Colorado, the attachment?

A. They were followed right in as fast as the Fire King was finished, as quick as it was finished. The Colorado followed right in.

X Int. 7. Was anything made on the Colorado before August 7, 1872?

A. That I cannot say. I am not positive.

X Int. 8. Can you tell how soon after August 7th it was begun?

A. I can't say it was after nor before. I can't say it was commenced afterwards. I say it may have been commenced before August.

X Int. 9. Or it might have been afterwards?

A. No, I don't think it was afterwards. I think it was probably commenced before. It may have been after August 7th, but it was in July or August some time.

X Int. 10. Who else was working in the shop when the model was made for the Colorado, the wood model?

A. When the patterns were made?

X Int. 11. Yes.

A. Mr. Moder was working in there. I think he was. I wouldn't be certain. It may be possible he was not working there at that time. He was working there, I know, some time that year. He may have been not at that time there.

X Int. 12. Who was foreman of the pattern shop?

A. There was no foreman of the pattern shop. I was superintendent of the works. I had charge of all the departments there, sir.

X Int. 13. Who else was at work there besides Mr. Moder and your son, at that time?

347 A. I do not recollect. I think Mr. Belden was, though I would not be certain about that. I can tell by my pay-list.

X Int. 14. Can you tell from your time-book?

A. I can from my pay-list, not from the time-book; that is, the moulder's time-book, sir. I can tell from my weekly pay-list, though.

X Int. 15. Have you that pay-list here?

A. No, sir; I have not.

X Int. 16. Can you bring it here?

A. Yes, I can bring it here.

X Int. 17. Can you tell how long your son was at work on this wooden model?

A. It was not a model.

X Int. 18. Wooden pattern.

A. No, sir; I cannot tell exactly how long he was at work at it.

X Int. 19. Did you make an application for a patent on this attachment to the Colorado?

A. I made an application for a patent after we had got the Brilliant out, I believe; not on the Colorado. I don't think there was an application made for the Colorado.

X Int. 20. What became of the stove you called the Colorado?

A. The one that we did make?

X Int. 21. Yes.

A. I sent it to the store, sir, from the foundry.

X Int. 22. Where is it now?

A. I do not know. I haven't seen it. I don't know where it is, to my knowledge.

X Int. 23. Was it complete the last time you saw it?

A. I think it was, or pretty near. I think it was completed as far as we wanted to complete it; that is, as far as to satisfy ourselves of what it was or what it would be, and that it would be too costly for a stove of that class.

X Int. 24. Did you ever build a fire in that stove?

A. I don't think I did; no, I am pretty certain of the fact that I did not. I don't think I did.

348 X Int. 25. What is the sheet-iron piece that you spoke of in your direct examination as wanting in the stove when it went to the store?

A. The piece that goes down on the back of the hot closet and under the bottom of the hot closet that forms the back and the bottom of the hot closet.

X Int. 26. What was the effect of that piece being gone?

A. It would leave the hot closet in a condition that it could not be used. There would be no back nor bottom to the hot closet.

X Int. 27. Well, then, it would not be a closet, would it?

A. Not a closet. Well, no, it would be a closet no more than a house would be a house without doors or a floor. It would not be a house without a floor.

X Int. 28. Would it be a house if it had one side gone?

A. Well, I don't know. That is a question you will have to determine yourself.

X Int. 29. Isn't that the case with this hot closet, that one side is gone?

A. Of course it was in an incomplete condition. It was not completed.

X Int. 30. Was this projection on the back of the stove which forms the bottom of the flue attached to the Colorado when you sent it to the store?

A. I think it was, sir. I think all the attachments were there. That is not a model exactly. If you will allow me I will show you the difference between the Colorado and the Brilliant. This base-pan was fastened to the stove, as I tell you, by means of screws. The sides—that is, the door-frames, as we call them—of the hot closet were also attached and became a support to the base-pan. The exit-flue flange runs along the base-pan; that forms up the sides of the base-pan where the reservoir fits in and the exit flue is loose and lays in there forming this space under there.

X Int. 31. That is, the vertical exit flue is loose, you mean?

A. I mean the pipe-collar and flange connected with it were loose. That is the difference. This was all fastened together for some purpose, I don't know what. It was not a correct model of the Brilliant nor the Colorado, either one. The part I have just mentioned is shown
349 at H, in Figure 2 of the Buck drawing. The part that is loose is marked H in Figure 2 of the drawing, and it is fastened to the base-pan by the lugs P in Figure 2 of the drawings.

X Int. 32. Did the vertical exit flue or the pipe, after it passed the pipe-collar in the base-pan, form any part of the reservoir, either in the Colorado or the Brilliant?

A. No, sir.

X Int. 33. How was the reservoir heated in the Colorado and the Brilliant?

A. By fire passing under the reservoir.

X Int. 34. How was the front part of the reserv'ir heated, if it was heated?

A. All the heat it would receive would be through the back of the stove.

X Int. 35. Was the reservoir in the Brilliant and the Colorado so constructed as to have an air space between the back of the stove and the front of the reservoir?

A. It was not so intended; it was intended to have it up close, and sometimes it fitted very close, and sometimes, by means of the reservoir springing a little, it would leave a space there. I suppose a portion of it would fit tight.

X Int. 36. When did you make an application for a patent on this stove?

A. I do not recollect the date of the application. It was after the Brilliant was out, though, I think, for some time. There was no anxiety about making the application, from the fact that we supposed we had two years to apply.

X Int. 37. Were you thrown into interference with Nation & Little?

A. Yes, sir.

X Int. 38. What was the result of the interference?

A. That I am not posted in; I don't know what progress was made. It was in the hands of parties in Washington City, and I don't know the result of it. I was not called on for the purpose of pushing the matter.

X Int. 39. Didn't you agree to withdraw from the interference and make no further effort to procure your letters patent?

350 A. Well, I rather think I did. That whole matter was left in the hands of Mr. Buck, and whatever arrangement he made I acquiesced in, sir.

X Int. 40. Look at that and see if that is your signature. (Paper shown to witness.)

A. Yes, sir; that is mine.

Complainants' counsel offers in evidence an agreement entered into between E. C. Little, D. H. Nation, Charles H. Buck, and Franklin Clement, for the purpose of settling the matter of interference between the application of Clement and Buck for the reservoir cooking stove, then pending, and the letters patent granted David H. Nation and Ezekiel C. Little on the 6th of May, 1873, No. 138682 and Nos. 142933 and 142934, dated September 16th, 1873, and those granted to said Nation on the 9th of September, 1873, No. 142717, marked "Complainants' Exhibit I."

X Int. 41. What time in 1872 did you make the stove called the Colorado?

A. I say I can't tell exactly what time we finished it; we commenced to make it in July or August, to the best of my knowledge and from all the records I can bring to my memory; it was in July or August.

X Int. 42. 1872?

A. 1872.

X Int. 43. Did you ever call upon the Excelsior Manufacturing Company and examine their low-down or low-reservoir stove, called the Charter Oak Cooking Stove?

A. Their new one I have looked at—that is all; simply went in there and just looked at the stove, not in regard to the low-down. The stove stood before me, and I examined something about the fire-box, probably nothing further.

X Int. 44. When was that?

A. That was this spring or winter.

X Int. 45. Now, did you go there in June, 1873, and examine their Charter Oak Cook Stove?

A. Not that I remember of, sir.

X Int. 46. Didn't you go there in company with Mr. Buck and examine it about that time?

351 A. No, sir; I don't recollect of ever going there to look at that stove at all. I know I generally make it a point to keep away from such things as that.

X Int. 47. Didn't you go there and go to Mr. Bell and ask permission to examine the Charter Oak cook stove in May or June, 1873?

A. Well, I may; I don't recollect anything about that. If I went, I went with Mr. Buck or somebody else. I don't recollect the circumstances; it might have been; sometimes I go into Mr. Filley's with Mr. Buck for the purpose of examining a stove.

X Int. 48. Didn't Mr. Bell, about that time, show you the Charter Oak, and explain to you the formation of the reservoir and base pan?

A. I say I don't know; I don't recollect any circumstance of going there at all, although I may have went. I don't say I didn't, but I don't recollect any circumstance of going there to look at it. The first intimation I had, if I may tell exactly the circumstances in regard to Mr. Filley's stove or interference—my knowledge of it—I can give it.

X Int. 49. Didn't you know that they had made such a stove before you made your application for a patent?

A. That they had made their stove?

X Int. 50. Yes.

A. Oh, yes; I think they had; I think I had that knowledge. I think I had that knowledge of the fact that they had a stove.

X Int. 51. How did you obtain that knowledge?

A. It might have been hearsay. I will tell you how I obtained the knowledge, and I guess most men obtain their knowledge that way, from the fact that Mr. Wright came to the works one day, and says to me, "Little and Nation, or Mr. Nation were down wanting to sell me a patent." Says I, "What was it?" And Mr. Wright said that they had came there and offered to sell him a patent from drawings; that they produced the drawings and that they were fac-similes of our stove, and said he, "I told them that they might go to hell with their drawings," that we were making that stove. That is about all the knowledge I have of it.

X Int. 52. When was that?

352 A. That was some time through the summer, I think, of 1873, when we were making the Brilliant. I think that is the way my attention was drawn to the fact.

X Int. 53. Is that the first time you had ever heard of the Charter Oak stove?

A. That is the first time I ever heard of any interference about the patent or any trouble about the arrangement between us and Mr. Filley. The supposition I had was that our stove didn't interfere with anybody on account of its being a low-back reservior; that it was nothing more than the old stove with the base pan moved right directly down, same base ban, same character of operation. Where I got my knowledge from was from our old stove, the high reservoir, moving it down, my idea, making the low-down.

X Int. 54. When you heard of this patent of Nation & Little, did you go down to Mr. Filley to examine the cook stove made under that patent?

A. I did not. At that time there was no patent that I know of. He said then to Mr. Wright he had made an application, so Mr. Wright told me.

X Int. 55. Do you know when they first made this cook stove called the "Charter Oak?"

A. I do not, sir.

X Int. 56. Did you ever tell them you had ever made this invention?

A. Tell who?

X Int. 57. Tell Filley & Co., or the Excelsior Manufacturing Co.?

A. I don't think I ever spoke to Mr. Filley about it up to that time.

X Int. 58. Did you ever speak to Mr. Bell about it?

A. Well, that I won't be certain; I have met Mr. Bell several times; I don't know what conversation did occur between Mr. Bell and me. I don't recollect of anything occurring in regard to the stove, because I didn't know that there was any difficulty between us, not until after the letters of interference. Then I had some conversation with parties about it; not before that, that I know of.

X Int. 59. When did you make your application for the patent, 353 which was thrown into interference with Nation & Little?

A. I do not recollect the date of it, sir.

X Int. 60. Do you remember the date when the interference was declared?

A. No, sir; I don't recollect that. I recollect of being in Washington City, and the lawyers told us that there would be an interference.

Redirect examination by S. S. BOYD, Esq.:

Int. 54. This agreement seems to have been dated the 17th of April, 1873. Will you state whether or not you had any conversation with Little and Nation in regard to this matter, prior to the signing of that agreement?

A. Yes, sir; I did.

(It is admitted that the agreement referred to must have been dated April 17th, 1874, instead of April, 1873.)

Int. 55. What was it?

A. Mr. Buck, I think, sent for me to the foundry to come to the store to see Messrs. Little and Nation in regard to this matter. I went there and found Little and Nation at the office, Mr. Buck's office, and the conversation came up in regard to the interference, and the conversation was between Messrs. Little and Nation and Mr. Buck. Little and Nation, I think, wanted a royalty from Mr. Buck for manufacturing the stove. Mr. Buck objected to paying a royalty, and claimed that we were the inventors, and, finally, Buck told them he didn't wish to sell any patterns, all he wanted was a right to manufacture the stove. They would not agree to give him the right to manufacture at that time, and then Mr. Buck told them, he says, "Well, it is Frank's baby. You make an arrangement with him." By "Frank," he meant me, and I said to Little and Nation that if they had left it to me, I would go on with the interference. That about closed our conversation for that day, and Mr. Nation invited me to come to his house to see his patterns, which I agreed to do that evening. Then I went back up to the "works," and, I suppose, I had been there an hour or two may be—that same day in the afternoon, anyhow—and the porters called me, and I went up and found Mr. Nation there in 354 our warehouse, and we had some further conversation. I do not recollect, but it was something about the interference. I don't recollect what it was. Then the next day, Mr. Buck again sent for me to come down and sign this agreement. I don't know when the agreement was made, or anything about it, and I went up to Mr. Boyd's office here, and signed the agreement.

Int. 56. Was there any arrangement between you and Mr. Buck as to who should own this patent, provided you had a patent?

A. Oh, yes; it was to be assigned to Mr. Buck. At least that is my idea of it, in all cases.

Int. 56. Where is the sheet-iron work for your stoves done, at the foundry or store?

A. At the store.

Int. 57. Then, when this stove, Colorado, was sent to the store, it was incomplete in a portion of the sheet-iron work, was it?

A. I think so. I think the sheet iron had to be put on there. That is, my knowledge and my recollection is that way now.

Int. 58. As far as the castings were concerned, how was it?

A. They were all complete, sir.

Int. 59. Had the old part of the Colorado, when it was named the Paragon, been actually used?

A. The old Paragon?

Int. 60. Yes.

A. Oh, yes; many years we had used it.

(Signed) B. F. CLEMENT.

C. K. PICKLES, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. My name is C. K. Pickles; age, twenty-eight; residence, St. Louis; occupation, draughtsman.

355 Int. 2. How long have you been engaged as draughtsman, and what particular kind of drafting have you been accustomed to perform?

A. I have been in the business about thirteen years; more particularly mechanical drafting than any other.

Int. 3. Please look at the drawing shown you marked "Buck Drawing," and state what it is.

A. That is a drawing that was made from a stove in Mr. Buck's place of business.

Int. 4. By whom was it made?

A. By myself; a drawing made from a stove called the Colorado.

Int. 5. When did you make it?

A. I made it some time in the early part of January, 1878, about the 5th of January.

Int. 6. How was that stove, when you made the drawing from it, as to the completion or construction?

A. It was a complete stove; all complete, with the exception of the legs were not on the stove.

Int. 7. Did you note whether or not the warming closet was complete?

A. The warming closet was complete.

Int. 8. Please state whether the model now shown you, marked "Buck Stove," corresponds or differs from the stove Colorado, of which you made a drawing?

A. The construction of this part—the back part—is just the same, that is, the part underneath the reservoir, and the back of the warming closet, in the bottom, was made of sheet iron.

Int. 9. What was the base pan made of?

A. That was made of cast iron.

Int. 10. How was that base pan attached to the back plate of the stove?

A. Attached as shown in the drawing. It was bolted; bolts running through the lugs, shown in Figure 4. There were lugs projected from the back plate of the stove, shown in the drawing at G, of Figure 4, at G and E of Figure 4, E prime.

Int. 11. Was this drawing made directly from the stove or from the drawings?

356 A. The drawing was made directly from the stove.

Int. 12. Was it made to a scale or not?

A. Drawn to a scale.

Int. 13. What scale?

A. I don't remember what the scale was now; it is marked on the drawing.

Int. 14. A scale of half an inch to an inch?

A. One-half size; yes.

(Signed) CHAS. K. PICKLES.

Defendant's counsel states that he does not propose to produce the Colorado from which these model drawings were made, but if complainant or his counsel desire to see the same they can do so.

JUDSON F. CLEMENT, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. My name is Judson F. Clement; my age is twenty-three; residence, 3716 North 9th street, St. Louis; occupation, molder.

Int. 2. Please state what is your present occupation.

A. Molding is my present occupation.

Int. 3. Please state whether you have ever made patterns for castings?

A. Yes; I made patterns two years, for Buck and Wright.

Int. 4. Please state whether, in the year 1872, you made a pattern for Buck and Wright?

A. Yes; I made patterns in the year 1872.

Int. 5. Please look at the model now shown you, marked "Buck Stove," and state whether or not you ever made any patterns for a construction like that of hot-water reservoir and base pan?

A. Yes; I made patterns for a stove like that called the Colorado.

Int. 6. From what did you make those patterns?

A. I made it from an old stove called the Paragon.

357 Int. 7. In making your patterns for the attachment what did you have to work from, if anything?

A. Had an ordinary pencil sketch, rough.

Int. 8. Made by whom?

A. Made by the superintendent, my father.

Int. 9. B. F. Clement?

A. Yes, sir.

Int. 10. Do you know where that sketch is now?

A. No, sir; I do not.

Int. 11. Have you ever seen it since you completed your patterns?

A. No, sir.

Int. 12. When did you begin upon those patterns?

A. The date I don't exactly know. The first job I went onto was the heater of the Fire King, and after I finished that I went on these patterns.

Int. 13. How soon after you finished the Fire King patterns did you commence the pattern of the Colorado?

A. Right after I finished the Fire King.

Int. 14. Do you know whether you made more than one set of patterns for the Fire King?

A. That is all I made, one set.

Int. 15. After you made the wood patterns do you know anything about the iron patterns?

A. No, sir; I do not.

Int. 16. Do you know how long it took you to make those patterns for the attachment to the Colorado?

A. No, sir; I do not know how long.

Int. 17. Do you know whether it was a long or a short job?

A. I don't remember; it could not have been a very long job; nothing to do only to alter this back part of it.

Int. 18. Do you know what became of the stove after it was finished?

A. No, sir; I do not.

Int. 19. Now, what season of the year was it you were working on those patterns for the Colorado?

A. Along in the summer time. I remember that we were working with the doors and windows all open.

358 Int. 20. Were you working with the doors and windows open at the time they were completed for the Colorado?

A. I think we were.

Int. 21. After the wood patterns were completed had you anything to do with them?

A. No, sir; not after they were completed.

Int. 22. They then went to the foundry to take off the iron patterns?

A. Yes, sir.

Int. 23. Do you know whether those wood patterns are in existence now?

A. I believe they are.

Int. 24. When did you last see them?

A. Saw them the first part of this year; the forepart of this year, I believe it was, I seen some of them.

Int. 25. Looking at the drawing, Buck drawing, state how the mode of attachment of the base pan to the back plate of the stove shown in Figure 4 corresponds with the mode of attachment, as provided in the patterns you made for the Colorado.

A. Seems to be exactly the same way of attaching with a lug, G, in the base,going through; then the door frames were fastened on to the back with a lug with a bolt through it, E prime, and the base just set right in on the top of the frame.

Int. 26. By frame you mean——

A. This door frame of the warming closet, marked in the drawing "C."

Cross-examination by Mr. HUNT:

X Int. 1. Was there a warming closet attached to the Colorado before you began to make the alterations in it?

A. No, sir.

X Int. 2. Was the low addition fastened to the back by screws?

A. The warming closet was.

X Int. 3. How was the base pan attached?

A. That was fastened on to a bolt or lug on the back of the stove, and there was a bolt put down through that. The base was fastened on the back G, with a bolt going through the lug, fastened through the bottom of the base.

359 X Int. 4. What alteration, if any, did you make in the back plate of the stove?

A. The letter D of Figure 4 the back was cut out and set back same as shown in the model.

X Int. 5. Who instructed you in this work?

A. My father, the superintendent of the works.

X Int. 6. Is he a model maker?

A. No, sir.

X Int. 7. Is he a pattern maker?

A. No, sir; he gave me drawings and I worked from the drawings partly and partly from his instructions.

X Int. 8. Who was at work in the pattern shop at that time?

A. There was a gentleman by the name of Moder, and one named Belten.

X Int. 9. Did they assist you any in this work?

A. Mr. Moder did give me some instructions on opening this hole in the back of the reservoir.

X Int. 10. Where is Mr. Moder now?

A. He is now working in the pattern shop of the Buck Stove Company.

X Int. 11. Where is Mr. Belten?

A. I don't know where Mr. Belten is; I hav'n't heard of him for some time.

X Int. 12. Where was he when you last heard from him?

A. When I last heard from him he was working for the Western Stove Foundry.

(Signed) J. F. CLEMENT.

LUCIUS A. BRIGHAM, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. My name is Lucius A. Brigham; residence, 1222 Madison street, St. Louis; occupation, tinner.

360 Int. 2. In whose employ are you now, and how long have you been in the same service?

A. The Buck Stove Company.

Int. 3. How long have you been employed by them?

A. Over nine years the last time.

Int. 4. Please state whether you remember doing anything to a stove called Colorado, as to filling up some extension to it.

A. I put in a sheet-iron back.

Int. 5. How did the construction of that stove Colorado, to *to* which you put a sheet-iron back to the warming closet, correspond with the model now shown to you, marked "Buck Stove?"

A. Looked a good deal like it.

Int. 6. With the exception of the material, how does it represent the stove Colorado, to which you applied the back for the warming closet?

A. I think it looked, as well as I can make out, like it.

Int. 7. Did you make that model?

A. Yes, sir; I believe so.

Int. 8. From what did you make it.

A. The Colorado.

Int. 9. In what condition was the Colorado when you put this back and bottom to the warming closet as to completion?

A. It was all complete when I put in the sheet-iron back, all but that.

Int. 10. Where did you put on that sheet-iron back, what place?

A. At Mr. Buck's Stove Company's, 720 Main street.

Int. 11. At his foundry or store?

A. Store.

Int. 12. Now, can you tell when you put that on?

A. No, I cannot tell.

Int. 13. Can you tell whether you put that on prior to the death of Mr. Wright?

A. I think I did.

Int. 14. How long before?

A. Well, I can't state when I put this on.

Int. 15. Can you state what season of the year it was you put that on?

361 A. No, I could not.

Int. 16. Can you tell anything about how long before Mr. Wright died you put that back on?

A. No, sir, I can't tell you; I can't recollect when I put it in.

Int. 17. When, recently, have you seen that Colorado?

A. Seen it every day or two, I believe.

Int. 18. State whether or not it is in the same condition now it was when you finished it originally?

A. Yes, I believe it is, as far as I know.

Int. 19. Do you remember when you made that model?

A. I made this model last winter some time.

Int. 20. Please look at the drawing marked "Buck Drawing," and especially at Figure 4, and state how the mode of attachment of the base pan to the back of the stove, shown in drawing, corresponds to the way it was attached on the Colorado stove of which you have spoken?

A. I am not acquainted with drawings enough to tell.

Int. 21. You can't tell anything about drawings?

A. No, sir.

(Signed) LUCIUS A. BRIGHAM.

BERNARD GROTE, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. Bernard Grote; age, thirty-seven; residence, 1338 North Fourteenth street; work at Buck's Stove Works—porter.

Int. 2. Where were you working in the years 1872–1873?

A. Buck's Stove Company.

Int. 3. Do you remember a stove called the Colorado?

A. Yes, sir.

Int. 4. Have you seen a stove in the store of the Buck Stove Works now called the Colorado?

A. Yes, sir.

Int. 5. When was that stove brought to Buck's store?

362 A. That stove was brought in the store nine months before Mr. Wright died.

Int. 6. Do you remember the date of Mr. Wright's death?

A. He died—I don't know particularly which date, but he died in the fall.

Int. 7. What year?

A. 1873.

Int. 8. When did you last see that stove?

A. At the Buck Stove Company to-day.

Int. 9. How does it compare as to its condition with that in which it was after it was finished there by Mr. Brigham?

A. It looks the same way, except we put in a sheet-iron back *in* on the bottom.

Int. 10. Do you remember who put that sheet-iron back in?

A. Yes, sir.

Int. 11. Who?

A. Mr. Brigham.

Int. 12. How does that stove compare in appearance with this Buck model?

A. It is the same kind, like this exactly; of course that is cast-iron, and this tin.

(Signed) BERNARD GROTE.

CHARLES H. BUCK, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. My name is Charles H. Buck; age, fifty-five; residence, 2917 Morgan street, St. Louis; occupation, stove and foundry business.

Int. 2. How long have you been in that business?

A. Since 1858.

Int. 3. As a member of the firm?

363 A. Of Buck & Wright up to the time Mr. Wright died, in the fall of 1873; since that time it has nearly been my own, that is, the Buck Stove Company.

Int. 4. Please look at the model marked "Buck Stove," and state what that represents.

A. That represents the low-down reservoir, with a flue passing under the center and out at the back.

Int. 5. If that represents any stove ever made in your foundry, by what name called?

A. The first stove we made was the Colorado.

Int. 6. State the circumstances under which that was made.

A. We went to work to get up a cheap low-down stove; thought that it was too good a thing after we got it out. Only made one size, No. 7, and laid it aside till we got time to go to work to alter these patterns into a first-class stove, the Guarantee and the Brilliant. That was in the summer of 1872 we got the first Colorado. It run along, and I think it was along in the spring of 1873 before we commenced altering our Brilliant" and Guarantee to this pattern—I think along in June, 1873, before we commenced to work on the Brilliant and Guarantee to get it out. The other stove we laid aside; thought it too good a thing for a cheap thing.

Int. 7. What became of that stove?

A. We have got it at the store now.

Int. 8. How does its condition now compare with the condition when first sent to the store?

A. The same thing exactly.

Int. 9. By whom were the patterns of that stove made, do you know?

A. Mr. Clement's son; I think his name is Barney.

Int. 10. Do you know by whom the drawings and sketches from which the younger Clement worked were prepared?

A. Got up by the old man, the foreman, B. F. Clement; he originally got up the drawing, only a rough sketch, that is all there was of it.

Int. 11. Do you know where those drawings are now?

A. I do not.

Int. 12. Please look at the drawing marked Buck Drawing, and
364 especially at figure 4, and state how the mode shown there of attaching the base pan to the back of the stove corresponds to the
manner in which the base pan was attached to the back of the Colorado, of which you have just spoken?

A. I think it is the same thing. I can't swear positively, but I think it is.

Int. 13. Can you state positively whether or not the base pan of the Colorado was made detachable from the back plate of the stove?

A. Certainly it was; this whole thing was put on with bolts. We have the stove there to show for itself.

Int. 14. Please state whether the reservoir on the Colorado was part of or separate and detachable from the base pan?

A. The same thing as this exactly—can take it right off.

Int. 15. Do you know when the sketches were first made for that Colorado—any means of fixing it?

A. Only by our books at the foundry, that is all. The only way I have to get at that is this, and I know it to be a fact that Mr. Clement's son made the Fire King pattern; these Fire King patterns were taken off along in June. He immediately commenced on this low down Colorado, which certainly could not have been later than July or August that he commenced on these patterns, that is as near as I can get at it. I can't state anything more positively than that. As I say, Mr. Wright was running the foundry at that time, and I used to go up there once a week, but I know positively he commenced work on the Colorado just as soon as he got the Fire King done. I can swear positively that the Fire King was on exhibition at the Fair Grounds, October, 1872. I can't swear positive that the Fire King, short of October, 1872, was completed ready for sale.

Int. 16. How long did it take to complete the stove after the patterns were made?

A. Six weeks or two months.

Int. 17. Can you state when this Colorado was completed?

A. No, I cannot.

Int. 18. Do you know when it came to the store?

A. The only thing I have got to show is, it came to the store in February, 1873.

365 Int. 19. What enables you to fix that?

A. From the receipt-books of the store, showing that stoves came down each month. We simply keep a memorandum of every stove that comes down in that time.

Int. 20. Have you got that receipt-book with you?

A. No, sir; it is at the store.

Int. 21. Have you looked at this memorandum recently?

A. Yes, sir.

Int. 22. From that, what date do you fix for this stove coming?

A. It came down in February, 1873, without any doubt at all.

Int. 23. Can you tell whether or not you saw it completed at the foundry before it was brought to the store?

A. I don't remember; will not swear to it, but I am positive it was, though.

Int. 24. Something has been said, in the testimony heretofore, in relation to a settlement between Mr. Clement and Little & Nation, in relation to their claims as being the inventors of this construction, and it has been stated that that settlement was left to you by Mr. Clement to make; now will you state what that settlement was?

A. I can't state it without sending for it, but Mr. Clement assigned the patent to me; without having that here I can't say exactly what it contained.

Int. 25. I don't ask what is contained in the settlement.

A. Well, the point was simply this: We filed applications for this thing, and when we filed our application, we found Little & Nation ahead of us with a model; we filed, I don't know what you call it, an interference, I suppose. Little & Nation came down to see me, and we concluded it was not worth while to fight it, all I cared for was to use this thing for my own use. I didn't propose to sell any patent at all; so they concluded they would give me a right to manufacture them if I would not prosecute my interference. That is the whole sum and substance of that.

Int. 26. Was there anything paid by you for that right?

A. Not a cent; simply in consideration that I would not prosecute my interference.

Cross-examination by Mr. HUNT:

366 X Int. 1. Mr. Buck, how are these stoves held together; I mean how fastened so as to stay together?

A. The front part of the stove is bolted, as any ordinary stove is, by rods. This machine is put on with bolts, to hold it on; the reservoir sits on loose. That is the way we make them, at least.

X Int. 2. Now, is the back flue there, under the reservoir, any more detachable than any of the rest of the stove?

A. Of course, not detachable at all.

X Int. 3. Not detachable at all?

A. Well, only that you lift the reservoir off; it would come off with the reservoir, of course; if you take the reservoir off, you take this flue off, and you have got no flue at all.

X Int. 4. How can you use the stove without the reservoir on?

A. Couldn't use it at all.

X Int. 5. Well, then, it is not detachable, is it?

A. You can take it off, because it is simply put on with bolts.

X Int. 6. Isn't all the stove fastened together with bolts?

A. Yes, sir.

X Int. 7. Was there any provision made in your stove for using the stove and the base pan without the reservoir?

A. Not at all. Use the reservoir with it; that is, you mean the reservoir had to set on here, in order to use the stove?

X Int. 8. Yes, sir.

A. Certainly.

X Int. 9. Was there any open air space between the reservoir and the back of the stove?

A. Not at all.

X Int. 10. Was there any connection between the rear upright flue from the base plate with the reservoir?

A. Simply this opening here, that went straight back. This is exactly the way we made it. The pipe sets on with a collar in the base pan.

Re-examination by Mr. Boyd:

Int. 27. You mean no provision was made in that stove to use it when the reservoir was off?

A. None.

367 Int. 28. Suppose you took the reservoir off and put a simple plate in the bottom of the reservoir, couldn't you use it?

A. Yes, sir.

Int. 29. You could use it just as well as with the reservoir on?

A. Exactly, without heating any water. It would have been a hot closet and no hot water.

Int. 30. You could have taken the hot closet off and used the stove? (Objected to.)

A. Yes; the stove would work perfectly.

Int. 31. With that Colorado, could you use the stove, provided you took the hot closet off?

A. No, sir.

Int. 32. Why not?

A. Because the pipe collar was back there.

Int. 33. Then does the casting from which the hot closet is made form a part of this base pan or a separate casting?

A. It forms a part of it in the rear.

Int. 34. As the Colorado was constructed, did the sides of the hot closet form a casting with the base pan, or was there a separate casting?

A. Couldn't have made a stove any other way, I don't think.

Int. 35. Than what?

A. It would have to be made—the hot closet and base pan—would have to be made in connection with the hot closet; no doubt of that.

(After examination.)

I will correct my statement. This could have been made with a hot reservoir without a hot closet; also, could have been made with a flat plate on here, leaving off the reservoir.

Int. 36. That is, you mean the base pan was separate both from the reservoir and the closet?

A. Yes, sir, and could have been made without it. It could have been made either with or without the reservoir or hot closet.

(Signed) CHARLES H. BUCK.

368 JAMES G. CLARK, being produced and sworn as a witness on the part of the defendant, deposes and says:

Direct examination by Mr. BOYD:

Int. 1. What is your name, age, residence, and occupation?

A. My name is James G. Clark; age, fifty; residence, St. Louis; occupation, secretary of Buck's Stove Company.

Int. 2. Have you the book in which the date or the time of the bringing of the stoves from the foundry to the store are entered in the Buck Stove Works?

A. I have it.

Int. 3. From that can you tell when the stove Colorado was brought to the store?

A. I simply judge from the way the record was kept that it came down in February, 1873. The year 1873 is down here all right, but the months, like the balance of the records there, are not put down; but this record was divided off here into twelve months, first line January, second February, and so on, but this came down on the second month in the year 1873, February.

Int. 4. Is that the way that the record of the coming of the stoves to the store has been always kept?

A. That is the way it was kept then, and previous to that, and the way it is kept now, except I am more particular about putting down months.

Int. 5. From that record have you any doubt about the month on which that Colorado came to the store of Buck & Wright?

A. No; I have no other month to put it except February, 1873; is the only place I could put it in from this record.

Int. 6. Do you or not remember the fact of the Colorado coming there?

A. I was not in the house at that time.

(Parties admit the entry was made of the stove Colorado coming to the shop as February.)

Cross-examination by Mr. HUNT:

X Int. 1. Which line indicates that the Colorado was brought there in February?

369 A. The second line; that is what is called the first line; this the second line. The first is January, the second is February.

X Int. 2. What did the top line indicate?

A. That is the number of the stove—the size.

X Int. 3. How many numbers were made of the Colorado?

A. There were three sizes, 6, 7, 8, but there was only one made up to that time of the extension low-down reservoir, that was a No. 7.

X Int. 4. Then these——

A. No. 7 was what we called the plain Colorado, without any extension or reservoir.

X Int. 5. And the number 1 is the extension?

A. One, No. 7.

(Signed) JAMES G. CLARK.

G. F. **Filley**, being produced and sworn as a witness on the part of the defendant, deposes and says:

Int. 1. (By Mr. **Boyd**:) What is your name, age, and residence?

A. G. F. Filley; age, sixty-three; I reside in St. Louis, and am a stove founder.

Int. 2. How long have you been in the stove business?

A. Since 1849.

Int. 3. You are president of the Excelsior Manufacturing Company?

A. Yes, sir.

Int. 4. Are you familiar with the construction of the low-down reservoir, which is claimed to be the invention of Little & Nation, and involved in this suit?

A. I am.

Int. 5. Will you please state when you commenced in your foundry to make stoves of that description, such as shown in the model, as illustrated in Complainants' Exhibit G?

A. We commenced making that stove—commenced the drawing about the 18th or 20th of November, 1872.

Int. 6. Now, state under what circumstances you commenced making a stove of the kind; what led you to do it?

370 A. Some few months prior to that time we had obtained a license from Messrs. Bussey and McLeod, for the purpose of attaching the low reservoir to a stove that we were making. I sent to Troy—I think it was—it might have been Chicago, for one of their stoves—no, I am pretty sure it was Chicago, with a view of examining the stove, for the purpose of examining the stove with a view of making that attachment to the patterns that we were then making. I might say we were then just about completing a set of patterns, what we called a plain stove, that is, a stove with a low reservoir, for which this was to be an attachment. I took that stove of Messrs. Bussey & McLeod, that arrived here somewhere about the 14th of October, 1872, into my pattern shop, set it up on its end, had the reservoir detached, back plate detached, etc., with a view of seeing more particularly its construction and operation. This was a daily practice for a month, or nearly so, if not quite. I was fully satisfied that the construction was wrong and the operation not complete, or not what we would call a good operation. I was dissatisfied with the arrangement and concluded that we would not use that construction. This was a matter of conversation between myself and our pattern makers, Mr. Nation and Mr. Little, and other parties in our pattern shop. It was a matter of conversation and examination daily for a month or more, and we concluded that we would not adopt the plan of the Bussey reservoir. In conversation with Mr. Nation at that time, I told him, or prior to that time I told him that we wanted a construction by which the fire would pass under the reservoir rather than to the side of the reservoir. This conversation hap-

pened several times. Just on the completion of these patterns that I have spoken about, I called Mr. Nation's attention to this thing again, and he made this remark, with a sketch: "Why not make a base pan this way, and put in flue strips, so as to take the fire down one of these corners of the stove into the base pan, and return back into the body of the stove?" Says, I, "Mr. Nation, we don't want that; that is what Chamberlain has made at Cincinnati, we don't want that." There the conversation ended. That night, when I went home, I made a sketch of a construction that I wanted, with a desire to produce the result that we wanted to produce.
371 As my usual custom was to go to the store the next morning, that is, to go to the store in the forenoon, and then to the foundry in the afternoon, I, immediately after my breakfast, went to the foundry without going to the store, and showed Mr. Nation my sketch, and asked him to make for me a more perfect sketch for that day, which I would get when I went to the foundry that evening, of the construction that we proposed to make, and immediately go on and get up the drawings for the completion of this arrangement. He went on through that day and made this sketch, which I got the evening that I went up there. I instructed him to go on immediately and get up the drawing for the application of this reservoir and closet to stoves that we had made. We commenced from that day to make those improvements.

Int. 7. Have you that sketch with you that you showed Mr. Nation?

A. I have.

Int. 8. Will you please produce it?

A. I produce the sketch, and attach it to a larger piece of paper, there being nothing on the back of the sketch.

(Sketch offered in evidence, and marked "Defendant's Exhibit, Filley's Sketch.")

Int. 9. Can you tell when that sketch was made, what day?

A. Not exactly.

Int. 10. As near as you can?

A. I can only tell it by reference to the circumstances that transpired at my house.

Int. 11. What were those?

A. A gentleman was stopping at my house by the name of Stewart, and this gentleman and my family wanted to hear some reading of Vandenhoff, and were desirous of my going with them, and I told them, no, I would stay at home; and while they were gone I made that sketch, and on their return from the reading I jokingly said to them that while they had gone down to the reading to spend some money and to get a little pleasure, I had made an improvement there that was worth something to the stove trade.

Int. 12. Now when was that; what was the date?

A. That was about the 18th of November, 1872.

372 Int. 13. What does this sketch represent? I will mark the sketch "Number 1" and "Number 2," so you can refer to it more intelligibly; I will also mark it in ink, with letters of reference; now, looking at the sketch as marked, will you please describe it?

A. The sketch, as marked, "A" would represent the reservoir of the stove; "F," the closet under the reservoir; "E," the base pan, what we call the base pan as connected with the stove; "D" would represent the opening from the rear flue of the stove into the base pan "E," "C" would represent the back part of the stove, the oven of the stove, and "B" represent the exit pipe.

Int. 14. Please state what, if anything, was said by you, or instructions given by you when you handed that sketch to Mr. Nation, as to the manner of attaching those parts, how were they to be cast, etc.?

A. When I showed this sketch to Mr. Nation in the morning following, he made this remark that "That seems to have accomplished the purpose intended;" and I then gave him instructions how that the closet could be attached to the stove, and the base pan to the closet, or the base pan to the stove, and the closet to the base pan; this boiler A was to be reversible with a flue through it, may be placed at the back end or the front end; that is, the back or the front of the reservoir, the boiler to be reversible.

Int. 15. Please state if, when you showed that sketch to Mr. Nation, he said anything in regard to his having conceived of such a construction?

A. He did not say anything.

Int. 16. Do you know when Mr. Little first saw that sketch, or whether he ever did see it at all?

A. Positively I do not; but there is no doubt that I showed it to him.

Int. 17. Who was the man particularly in charge of the pattern department there?

A. Mr. Nation.

Int. 18. What were Mr. Little's duties?

A. He was general superintendent of the foundry.

Int. 19. Was he a pattern maker also?

A. No, sir.

373 Int. 20. After you showed that sketch to Mr. Nation, please state when, if at any time, he or Mr. Little ever claimed to you that the construction shown in the sketch was original with them or either of them.

A. After I made this sketch and commenced making the patterns, I set myself to work getting up specifications and claims for a patent, which I have got. I now produce them and offer them as an exhibit—Filley's specification. As I prepared these and reread or rewrote them, I kept them in my pocket for perhaps a month or six weeks, and in conversation (perhaps it was a month or six weeks after this) in a casual way to Mr. Nation says I, "It seems to me that this thing is worthy of a patent, and I believe I will make an application for a patent." "Why," Mr. Nation says, "I done this ten days ago." Says I, "You are not the inventor of that thing;" and there the conversation ended. Do you wish me to detail other conversation?

Int. 21. Any conversation that happened with Mr. Nation?

A. No other conversation happened with Mr. Nation at that time. The next morning, as I didn't want any words there, at our pattern shop, the next morning I sent for Mr. Nation to meet me at my office on Main street. He came down to my office, and says I, "Mr. Nation, I understood you to say last night that you claim to be the inventor of that stove." "Yes," he said he did. Says he, "I made a sketch of the stove before you showed me your sketch." "Then," says I, "Mr. Nation, why didn't you tell me at the time you were making this sketch, or that I gave you instructions to make this sketch for me in the first place, and also those patterns, that you were the inventor, and that would have ended the sur-

prise about the matter," something like that. Well, he simply made the remark that "he did not tell everybody his business." "Now," says I, "Mr. Nation, you were not the inventor of that; if you had been the inventor of that stove you would have told me at the time I asked you to make the first sketch that you were the inventor of this thing." He simply says that "You can make an arrangement at a very cheap rate for a royalty;" and that ended, as near as I can recollect, the conversation at that
time about this matter. But to go back to the night he told me he
374 had made application for a patent; I went down to the foundry
yard and met Mr. Little; says I, "Mr. Little, Mr. Nation claims to be the inventor of the low-down reservoir stove." Mr. Little says, "Yes, he wants to get something to protect a stove that he has got, called the Satisfaction; that he thought it was an interference with the Satisfaction. "Why," says I, "it is not an interference with the Satisfaction, nor has nothing to do with it, no construction like it, and it bears no reference to it at all." That ended that part of the conversation.

Int. 22. In that conversation with Mr. Little, did he claim to be the inventor of this?

A. No, sir; he did not; he simply said that Mr. Nation thought it would be a protection to the Satisfaction.

Int. 23. When Mr. Nation told you he was the inventor of this thing, did he claim Mr. Little had invented it likewise?

A. No, sir; he did not.

Int. 24. Did he ever claim that to you?

A. No, sir; he did not.

Int. 25. Now, if you had any other conversation with Mr. Little or Mr. Nation, in regard to the matter, you can state it.

A. There were conversations with Mr. Little and Mr. Nation in reference to this for some two months after that, for two or three months; as near as I recollect nothing further said about this thing to them.

Int. 26. About your taking a royalty from them, anything said afterwards in regard to that?

A. Yes; that happened two or three months after this. They had made an application, as they said, for a patent of it, and two or three other kinds of stoves, and that they would sell out if I would pay the expenses for obtaining the patent. They would give me three-quarters of the entire interest—that is, for me to hold the majority of interest in the patent if I would pay for the patent, the expenses in obtaining the patent. They said they would give, it might have been two-thirds—at any rate it was the principal interest in this—provided I would pay the expense of getting out the patent, and at one time I entertained the proposition of
doing it; but when I came to think about the matter I declined
375 to do it, because I declined to pay for a thing which I thought belonged to me, which was my own invention.

Int. 27. Now when you made this sketch that you showed to Mr. Nation, did you show it to anybody else on that same day?

A. I must have shown it to half a dozen people that day. I presume I showed it to Mr. Bell, and I showed it to others.

Int. 28. Where did you show it to Mr. Bell, do you remember?

A. At our store; perhaps I ought to make this qualification or explanation. I instructed Mr. Nation to make me a more perfect and enlarged sketch of this, the morning I went to the foundry, which he did do, and that more perfect sketch I showed to many people.

Int. 29. Where is the sketch now?

A. I have lost it; I don't know where it is. I carried it in my pocket a long time.

Int. 30. In making these proposed changes upon this stove of Bussey, McLeod & Co., what where Mr. Nation's duties?

A. Simply to do what we instructed him to do.

Int. 31. How long after you say that stove of Bussey, McLeod & Co. was set up in your pattern-shop before this sketch was made?

A. It was about a month. We got the stove, if I recollect right, on the 14th of October, and we commenced making these patterns about the 18th of November. It is possible it was there longer. It was in that time we had the stove and the examinations.

Int. 32. Please look at the model Buck Stove, and assuming that the base pan there is in fact detachable from the back plate of the stove, state how that construction corresponds with or differs from the construction shown in Complainants' Exhibit G.

A. The closet would be the same; the base pan would be the same, except the pipe collar that is located here in the base pan. The flue was attached to the reservoir by making a plate to fit to the back edge of the reservoir, carrying the plate hole through one side of the reservoir.

Int. 33. Any other practical difference?

A. I see no difference.

Int. 34. Now, will you state whether or not prior to this invention claimed by Little and Nation, it was customary to have an exit flue form a part of the reservoir?

376 A. It was; we had made reservoirs for many years that way.

Int. 35. How many years?

A. It dates back to near the war, probably about 1864.

Int. 36. Please look at Defendant's Exhibit No. 20, and state when first stoves like that were manufactured to your knowledge.

A. I can't state positively; I think as far back as 1864. I know soon after the war.

Int. 37. Does the reservoir attached to that exhibit show the form and shape of the reservoir used at that time?

A. Yes, sir.

(Defendant's Exhibit No. 20 offered in evidence.)

Int. 38. Will you state from your experience as a manufacturer of stoves what effect upon the operation of the stove the lowering of the base pan to a point below the top of the oven plate would have?

A. A deleterious effect—that is to say, the operation is not so good as it would be above.

Int. 39. In what respect is the principle of the operation of the stove modified by such change of construction?

A. In no principle, except it being dropped five or six inches below. The principle is precisely the same.

Int. 40. Now, suppose that that base pan, instead of being dropped just below the top oven plate, were dropped so that the exit pipe passed out in the regular extension of the central bottom plate of the stove, what then would be the difference in the practical operation of the idea embodied in the two constructions?

A. They would be the same.

Int. 41. Now, looking at Defendant's Exhibit Tiffany Model, and comparing that with the construction shown in Complainants' Exhibit G, which is your low-reservoir stove, state how the construction differs or resemble' each other, and in answering the question, I will also hand you the patent of Tiffany, corresponding to that in which the following language is used, in which the description of the construction is as follows: "The tank or closet being constructed separately or together, independent of the stove,
they are capable of being detached therefrom, leaving the stove
377 complete without their attachment, and leaving them complete with-
out being attached to the stove. The tank and closet may be attached to the stove in many ways; a very simple way when they are attached to the back of the stove, as represented in the accompanying drawing, is by means of lugs or hooks, either cast in the back of the stove with a corresponding eye in the side of the case surrounding the tank, or in the top and side of the closet, or the attaching hook and eye may be reversed."

A. They differ in this: that in the direct draft of the stove, as we call it, the fire does not pass under the reservoir, but when the fire passes 'round the stove and reaches the back central flue, it then passes up under the reservoir in the same manner as in this Exhibit G.

Int. 42. Now look a little more carefully at that model and the drawing, and see whether your statement that the direct draft does not pass under the reservoir is correct.

A. My statement is correct, according to the model. What we understand by direct draft is that the smoke or product of combustion passes out to the exit pipes without going around the stove. That is what we call a direct passage or direct draft.

Int. 43. Looking at that model, will you tell me how the direct draft passes out there when that damper is turned?

A. I see no passage from the exterior of the model.

Int. 44. Looking at the drawing, see if you can tell.

A. I don't think the drawings show very clearly.

Int. 45. Assuming that the direct draft does pass under the reservoir, then what do you say as to the difference between the two constructions?

A. The principle would be precisely the same. The only difference would be that the downward draft would be longer in this model, or in this stove, than in Exhibit G, a difference of distance.

Int. 46. Now, will you please state whether or not, prior to the year 1872, for instance, it was or was not customary among stove manufacturers to make the parts of their stoves detachable, such as the ash pan and other parts?

A. We have made stoves as far back as 1849 and 1850 with a detachable hearth.

378 Int. 47. How was the hearth attached to the bed of the stove?

A. By lugs being cast upon the sides of the stove and hooks in the base to hook on to those lugs, precisely as we make our base pan today.

Int. 48. How did the mode of attaching that hearth-plate and ash pan to the stove resemble or differ from the mode of attaching the base pan to Exhibit G?

A. It is precisely the same; done precisely the same way that we do now, to-day.

Cross-examination by Mr. HUNT:

X Int. 1. Did you suggest to Mr. Nation, when you showed him that drawing, how the base pan was to be attached to the stove?

A. I did.

X Int. 2. Did you say anything to him about the reservoir being reversible?

A. I did; or could be reversible; that is what I told him.

X Int. 3. If you considered yourself the inventor of the device of the base pan being attached to the back of the stove, why didn't you make application for a patent under it?

A. I drew up several specifications and claims. At first the question with me was that it was no invention. It was simply taking common Stewart reservoir and dropping it down four or five inches, which, perhaps, would be considered as no invention. I did draw up (and I have got the papers to-day) two different specifications and claims, with the view of making an application for a patent. I have two of the specifications here, but I have never read them since that time, and they are the ones I have already produced.

X Int. 4. Now state why you didn't go on and make your application.

A. Mr. Nation and Mr. Little both said that we might go on and make those stoves under a light royalty if we chose to do it. And another reason that I didn't go any further with the matter, it was at this time, in reference to our pattern makers and foreman, either or both, we were in a very peculiar position in reference to 379 our work at the foundry; and I ought to qualify or state some facts in regard to this matter; perhaps that would lead to those conclusions, if our attorney would think best. I would say, then, to go further back, after the night I had the conversation with Mr. Nation, when he told me that he was the inventor of this stove, I saw Mr. Little, and told Mr. Little that Mr. Nation claimed to be the inventor, and I said to Little that Nation was not the inventor. Mr. Little says, "Mr. Nation thought it would be a protection to the Satisfaction," which he had an interest in, by getting a patent, or something of the kind. On going to the store that evening I told Mr. Bell, in conversation about this matter, that Mr. Nation claimed to be the inventor of this stove, or rather, says I, "a circumstance has happened at the foundry this evening which will lead to the discharge of both Mr. Little and Mr. Nation." Mr. Bell was anxious to know what it was. I told him that Mr. Nation had claimed to be the inventor of the stove, which was not true, and that in justice to ourselves we ought not only to discharge him, but Mr. Little. Mr. Bell says that our peculiar relations now in our business are such that we cannot afford to do that thing, and we better not do it; that we had better compromise it, or do anything rather than to get into any law trouble or anything else. It was just about the time I was making a compromise with the creditors of Mr. How, for whom I have paid over $1,300,000, and that was the very reason that we did not go any further with the patent, because it would probably lead to the discharge of both these men, that were important and useful men to us at that time.

X Int. 5. You stated in your direct examination that you had taken out a license from Messrs. Bussey & McLeod.

A. Yes, sir.

X Int. 6. What patent was included in that license?

A. It was the patent of Messrs. Bussey & McLeod, I suppose; I did not examine the patent and don't know.

X Int. 7. Would you know the patent if you should see it now?

A. No, sir.

X Int. 8. Did you ever take a subsequent license from them to manufacture low-down reservoirs?

380 A. We did.

X Int. 9. What patents were included in that license?

A. They were, as I supposed, what was called the Bussey patent, and also the Nation and Little patent.

X Int. 10. Will you look at that license and state whether it is one that you made with Bussey & McLeod, and signed June 3, 1874?

A. I presume it is. This appears to be my signature.

(Paper offered in evidence marked "Exhibit K.")

X Int. 11. How came Bussey & McLeod to purchase the patents of Nation and Little?

A. I don't know, sir.

X Int. 12. Didn't you advise them to do so?

A. No, sir.

X Int. 13. Didn't you say to them that if they would purchase those patents you would pay them a royalty on all patents of Bussey included in that license?

A. No, sir; on the contrary, I told Mr. McLeod at that time that they were not—Little and Nation were not—the inventors of this patent, and I showed him the very papers that I exhibited here this afternoon to show him they were not the inventors, and the remark he made was that "it looks as if they were not."

X Int. 14. Why were those parties included in this license if they were not the inventors?

A. I can't tell you; do you allow me to make an explanation?

X Int. 15. Yes, sir.

A. This question of license came up between Mr. Bell and myself. I was opposed to the taking any license. Mr. Bell, I would say, has the management of our store department—the store; I take the outside business and the foundry. I was opposed to accepting any license whatever, and contesting this matter as to priority of the invention. Mr. Bell was of a different opinion. He says, "We better make some compromise and take a light license rather than to have any trouble or litigation under the present condition of things at the store." As I before remarked, we were just then about compromising or getting extension from the creditors of a certain party that we had become largely endorsers for, and it was
381 for that reason, rather than to have any trouble in that matter, that we agreed to take the license.

X Int. 16. Didn't you tell Mr. McLeod that if he would purchase this patent of Nation and Little, and join them in the license of their patents, the Bussy & McLeed patents, that you would take a license from them for all of them?

A. No, sir; I knew nothing of his arrangement with Nation and Little until he told me he was negotiating with Nation and Little, or had negotiated; I think he told me he had negotiated.

X Int. 17. When did you begin to make these stoves like the Nation and Little patents?

A. You mean the patterns?

X Int. 18. Yes, sir.

A. It must have been about the—not later than the 20th of November, 1872. It was immediately after the exhibition of this sketch, probably the same day, or the day after.

X Int. 19. Were those stoves marked "patented" that you made according to the patent of Nation and Little?

A. I presume they were; I don't recollect positively, but I think they were.

X Int. 20. Was the mark upon it as of the day of the date of the several Nation and Little patents?

A. You speak of "several;" we never used but the one; it is very possible they were, sir.

X Int. 21. This model, Complainants' Exhibit G, is marked on the back "Pat'ed 1873;" what patent does that refer to?

A. I suppose to the Little and Nation patent. I would state after we stopped paying license we took that mark off.

X Int. 22. Why did you mark it in that way?

A. I can't tell you; Mr. Nation attended to the lettering of the patents.

X Int. 23. Do you allow your workmen to mark your goods "patented" whether they are patented or not?

A. I would not if I knew it.

X Int. 24. How could a stove go out marked "patented 1873" without your knowing it?

A. It would be impossible for me to know all the details of our business. I don't attend to the shipping.

382 X Int. 25. That couldn't be marked on without being put in the pattern, could it?

A. It could be, but it is usual way on the pattern.

X Int. 26. Didn't you consider that you were making them under the Nation and Little patent?

A. I never considered Mr. Nation or Mr. Little as having a valid patent, or entitled to a patent—if I had I should have accepted their first proposition of accepting the majority of the interest simply upon the cost of obtaining the patents—for the reason that I considered it my invention, and I never would negotiate for it through them as a matter of principle.

X Int. 27. Didn't Nation and Little ever ask you any money for their patent?

A. Yes, sir.

X Int. 28. How much?

A. At one time they set a high valuation upon them; I don't recollect the amount.

X Int. 29. Was it $10,000?

A. I think so; I think as high as that.

X Int. 30. At what time was that?

A. Well, I can't recollect the precise time; it was in the early part of making this stove.

X Int. 31. You say in your direct examination that high-reservoir stoves were made shortly after the war?

A. I did not say that in that way, but they were. The question that was put to me then was, when we made this character of reservoir. We made the high reservoir stoves before the war.

X Int. 32. When was the high reservoir like Exhibit 20 first made?

A. I can't fix the precise date, but it was soon after the war we made them.

X Int. 33. Well, how long after the war?

A. I should think in 1864 or 1865.

X Int. 34. I mean to say how long after the war?

A. In 1865; the war closed in 1864, didn't it?

X Int. 35. The war closed in 1865.

383 A. Then it might have been a year or two later than that. I only fix the date from the circumstances that happened.

X Int. 36. That is what I wish to get at because you put it at 1864, and 1864 was before the close of the war.

A. Well, it was soon after the close of the war. I recollect that we made reservoirs, cast reservoirs with the flues.

X Int. 37. You said that the lowering of the base plate below the top of the oven was deleterious to the stove?

A. Yes, sir.

X Int. 38. In other words, that it produced a bad effect. Why did you make those low-down reservoirs?

A. Simply to gratify a whim and a fashion; never was one and never will be one as good as a high.

X Int. 39. Now, which is right about its being deleterious, you or the public that use them?

A. We think it is the public. We know it is deleterious, and we think the public has just found it out, because they are abandoning them faster than we ever adopted them.

X Int. 40. How long a time did you make stoves under the license fram Bussey & McLeod, dated June 3, 1874?

A. I think it was about one year; it might have been extended longer than that.

X Int. 41. Are the stoves that you make now of the same pattern of those that you made under that license?

A. They are not the same pattern, but the same construction.

X Int. 42. Are those stoves marked patented as of the various dates of the patents mentioned in that license?

A. No, sir; I think not.

X Int. 43. Why did you take this license, if this invention of Little & Nation's belonged to you?

A. The object was to prevent any litigation or trouble that might grow out of not taking them at that time.

X Int. 44. Do you know when Bussey & McLeod bought Nation & Little's patent?

A. Of my own knowledge, I do not.

X Int. 45. Did Mr. McLeod or Mr. Bussey ever tell you when they bought them?

384 A. If I recollect rightly, Mr. McLeod told me that he was negotiating for them. I am not quite positive.

X Int. 46. Didn't Mr. McLeod ask you that if they bought them you would take a license?

A. No, sir, he didn't ask me that question; that is, I have no recollection of any such question.

X Int. 47. Didn't you say to Mr. McLeod that if he bought them you would like a license from him?

A. No, sir; I was all the time opposed to it—taking a license; that Mr. McLeod well knew at the time.

X Int. 48. By whose directions was this license, Exhibit A, entered into by you?

A. It was through the advice of Mr. Bell.

X Int. 49. Who make up the members of your company?

A. Myself, Mr. James W. Bell, Mr. E. C. Little, and my two sons, Charles H. Filley and Frank Filley.

X Int. 50. I refer to that time.

A. There was Mr. Little, myself, and Mr. Bell—three.

X Int. 51. Is Mr. Little the one that is mentioned in the Nation & Little Patents?

A. Yes, sir, he is.

X Int. 52. What voice had he in the management of the concern?

A. He has been employed as superintendent of the foundry, or rather foreman—the labor department.

X Int. 53. Did he have anything to say about what patents you should purchase or take license under?

A. No, sir; he never was consulted.

X Int. 54. Did you ever have any conversation with Nation & Little in regard to their selling their patents to Bussey & McLeod?

A. No, sir; I was not aware of anything of the kind until, as I understood, their sale had been made.

JAMES W. BELL, being produced and sworn as a witness on the part of the defendant, deposes and says:

385 Direct examination by Mr. BOYD:

Int. 1. What is your name, age, and residence?

A. My name is James W. Bell; my age, fifty-two years; residence, St. Louis; occupation, secretary of the Excelsior Manufacturing Company.

Int. 2. How long have you been connected with that company?

A. Ever since its organization, in 1864.

Int. 3. Please state when you began to make the low-reservoir cooking stove like Complainants' Exhibit G, and the circumstances attending its first manufacture.

A. I should say we talked about the low-reservoir idea for three or four years before 1872, urging Mr. Filley to make it, but he opposed the principle as the construction then was, owing to the vertical dampers or flap dampers, and he never would consent to make the stove under that construction, for there had been a failure of those sold in this city, especially for coal. Finally we persuaded him to consent to get up a low-reservoir stove, and a stove called the Lady Washington, I believe was the name, was ordered from some place in the East; the invoice is dated October 7, 1872. The stove arrived here a week or ten days afterwards. I can't say positively who made it. I noticed the name of the stove on the invoice book. I am not sure about the "Lady Washington," but the name "Washington" was to it. This is the same stove about which Mr. Filley has testified. It was taken to the foundry or pattern shop, and the plan of construction discussed day after day, or at least whenever I was there. I was not there every day.

Int. 4. Between whom?

A. Mr. Filley, Mr. Little, Mr. Nation, and myself, we urging Mr. Filley all the time to hurry up the patterns and get out a stove of that character, and Mr. Filley would not do it. He went at it very reluctantly. One evening he came into the store with a piece of paper in his hand, with a drawing on it in pencil, and I met him right in the middle of the store, going back to his office, and he showed it to me. I says to him, "Mr. Filley, what a stupid set of fellows we have been all
386 this time, that we didn't think about such a simple construction as
that;" as it was nothing more nor less than our old reservoir stove with the reservoir lower down.

Int. 5. Please look at the Exhibit Filleys Sketch, and state what that is.

A. This is a similar drawing, but the one I seen was on a larger scale, drawn on a piece of pattern paper, such as we use at the foundry, but more in detail than this is, made by Mr. Nation. My recollection of it, the part shown across the top of the reservoir E would be about six inches.

Int. 6. How in other respects did that complete sketch correspond with Mr. Filley's sketch?

A. It was just the same idea, but on a more carefully made and larger scale; probably, I should suppose, four or five times; my recollection is four or five times as large as this.

Int. 7. Do you know where that sketch is?

A. I seen it afterwards, may be once or twice. I have no idea where it is now.

Int. 8. When was that, as near as you can fix it?

A. From all the data I can get, it was about from the 18th to the 21st of November, 1872.

Int. 9. How can you fix that date?

A. From the circumstance of Mr. Filley's conversation with me, and what he said to this preacher at his house the night before, and what he said to me, and we were both a good deal elated over the idea. The appearance of the drawing and the circumstances are as fresh in my mind as if they occurred yesterday.

Int. 10. When, after you saw that drawing, did you go to the foundry?

A. Probably the next day.

Int. 11. What was going on there in relation to this stove, if anything?

A. I can't state positively, but I am under the impression Mr. Nathan was making the drawings; of course that would not impress itself so fully on my mind as the sketch did.

Int. 12. Were you there frequently after that, at the pattern shop, while the work was going on?

A. Yes; sometimes once a week, and sometimes I am not there for a month.

387 Int. 13. Did you have any conversation with Mr. Little or Mr. Nation during the time those patterns were being made, and after this drawing was shown to you in relation to them?

A. I did every time I would go there; in fact, rarely go much any place else but in the pattern shop.

Int. 14. Did you have any conversation with either of them in relation to those improvements in the construction after you saw those drawings?

A. More than probable, in reference to the simplicity of the arrangement, and that during all the frequent discussions that had taken place in reference to the matter before that we had never conceived such a simple idea.

Int. 15. Prior to this sketch being shown to you by Mr. Filley, what, if any, suggestions had Mr. Nation or Mr. Little made in regard to this construction?

A. They never made any, that I remember, to me directly, but once Mr. Filley called my attention to a construction that Mr. Nation had suggested of three flues, and I said to him at once, "Mr. Filley, that is the same as Chamberlain's, of Cincinnati." I had been there a short time before, and Mr. Chamberlain called my attention to it, and the matter was distinctly in my mind of that construction. For that reason I suggested to him he better not use that.

Int. 16. Where were the three flues?

A. In the base-pan. Three flues—two flue-strips divided into three flues.

Int. 17. Two flue-strips parallel with a longitudinal line of the stove?

A. Yes, sir.

Int. 18. So it made three flues in the base-pan?

A. Yes, sir.

Int. 19. Where, in the Chamberlain stove, was that base-pan situated?

A. I should think about the center of the back of the stove.

Int. 20. What means were provided for the passage of the products of combustion into the base-pan in the Chamberlain stove?

A. An opening in the back of the stove.

388 Int. 21. How did the products of combustion pass from the base-pan through the exit flue?

A. My recollection of the construction was it passed down the side flues out into the base-pan back up through the centre.

Int. 22. Where, in relation to the reservoir, was the exit flue, nearer the stove or opposite, on the other side of the reservoir, in the Chamberlain construction?

A. My impression is it was on the top of the rear of the stove; I can't say positively; my attention was particularly called to the three flues.

Int. 23. After this suggestion was made by Mr. Nation to Mr. Filley in regard to using this construction, which you state was like the Chamberlain construction, what, if any, suggestions did he make, or did you hear of his making, in regard to improving the construction of the Bussey stove?

A. Not any.

Int. 24. When you went to the pattern shop after seeing this sketch which Mr. Filley showed you, and saw Mr. Nation at work on the patterns, what, if anything, did he say in relation to those patterns as to the origin of them?

A. Nothing; my object principally in visiting there was to urge the patterns along in order to get them completed.

Int. 25. When first did you hear any intimation that either Mr. Little or Mr. Nation, or both of them, claimed that they were the inventors of this construction?

A. I believe it was during one time when Mr. Filley showed me his specifications that he was drawing up, and he was asking me about getting a patent, and I rather laughed at the idea of such a thing being patented; it seemed so exceedingly simple, and so little change from the stove that we had been making for years that it didn't seem to me it was a patentable idea.

Question repeated.

A. After Mr. Filley had been talking about his own specifications he informed me they claimed to have been the inventors.

Int. 26. Did you ever read any of those specifications that you say Mr. Filley drew?

A. I have read them with him, and heard him read them repeatedly.

389 Int. 27. Are you able to identify the scraps that are produced here now as belonging to or part of those specifications?

A. I believe them to be the identical papers; they are in his handwriting.

Int. 28. Have you examined the specifications here, Filley's specifications?

A. Yes, sir.

Int. 29. And what can you say as to whether these were the specifications he showed to you at the time of which you have spoken?

A. Well, I can't answer that question; of course, I have no recollection of the exact wording of the specifications that he read to me, and that I read with him at different times, but I am satisfied in my own mind that these are the identical papers.

Int. 30. Well, after Mr. Filley stated to you that Little and Nation claimed to be the inventors of this, did you have any conversation with Little and Nation, or either of them?

A. No, sir; none at all.

Int. 31. Was Mr. Nation under pay the whole time he was performing this work?

A. Yes, sir.

Int. 32. Something has been said in relation to a certain license taken by the Excelsior Manufacturing Company, which license included this particular Nation patent; now, will you state the circumstances under which that license was taken?

A. It was necessary for us to have low-down reservoir stoves. We urged Mr. Filley to get up a set of patterns of some construction, and after some time he consented to that. It was necessary apparently at that time to take out a license; that is, we set at work with the idea of using Bussey's patent. Another thing, Mr. Filley's difficulties with Mr. How had just come out at that time, and he was financially a good deal pressed, and every point that could be made to increase our income it was desirable to do so; and I urged him, against, as I may say, *against* his judgment, to go on and get up a set of patterns and adopt that reservoir; that is, take out the license, start out with that idea; and in discussing the construction of
390 that reservoir it led to the adoption of the other and its construc-

tion. This license was an earlier license than the one included in the Little and Nation patent. The circumstances were the same under which the Little and Nation patent was taken as the other. Mr. Filley's financial difficulties led me to think we better not make any change, but to go on as best we could.

Int. 33. Do you remember any conversation with Mr. McLeod in relation to this license of the McLeod and Little and Nation patent?

A. I was present when he and Mr. Filley had a conversation.

Int. 34. What occurred there, as near as you can remember—particularly in relation to the invention of the construction as shown under the Little and Nation patent?

A. Mr. Filley gave Bussey & McLeod distinctly to understand that he was the inventor of that idea of the reservoir, showing him the specifications, I believe, in my presence.

Int. 35. Anything else shown there—any other description?

A. I don't remember positively about the sketch; I am under the impression it was also shown, because Mr. Filley had the papers together, and when we discussed the specifications that sketch was usually there; but I can't say positively that it was at that time.

Int. 36. Do you remember any remark that Mr. McLeod made?

A. No, sir; I can't say that I do. I am very clear in my recollection that my idea at the time was that Mr. McLeod fully understood Mr. Filley's claim.

Cross-examination by Mr. HUNT:

X Int. 1. When did this difficulty in connection with Mr. How occur, and how long did it last?

A. It commenced back, I may say—it commenced back in 1853—my first acquaintance with Mr. Filley, and it lasts up to the present time.

X Int. 2. Then you were not any worse off in 1874 or 1875 than you had been before?

A. Yes; Mr. How had went away and left Mr. Filley with these security debts to pay, and his creditors were pressing him, and we were paying more or less of it every day. We had paid some $200,000 before 1869.

391 X Int. 3. Have you got those debts all paid up now?

A. Probably my answer should be corrected by saying 1868. That is when we first commenced paying, in 1868.

X Int. 4. How much does this drawing, marked "Filley Sketch," differ from the stove called the Washington?

A. My recollection of the Washington stove is that it had no flue in the reservoir, or forming any part of the reservoir, but the heat coming in contact with the side of the reservoir through openings in the back plate of the stove.

X Int. 5. Does the invention in this drawing consist in passing the exit flue through the damper?

A. The way I look at that there is no invention about it. It is simply a rearrangement of our old reservoir that we made for many years, lowering the bottom of the reservoir A down to a line, say, to the center of the stove, while the old line or bottom of the reservoir rested on the top of the stove.

X Int. 6. Could you lower that down without making a change in the back plate of the stove?

A. No, sir.

X Int. 7. Now, didn't it require some invention to provide a way for the products of combustion to pass through the back of the stove and through this base plate and out through the reservoir?

A. No, sir; I don't think it required any invention. If making a hole in the back of a fire-plate of a stove is an invention you might say so, or lowering the opening in the back plate. Stoves have been made with openings in the back plate for the exit pipe—cooking stoves.

X Int. 8. Did you ever say anything to Mr. McLeod about the patents of Nation and Little before he purchased them?

A. I think not. The only conversation I remember in reference to the matter was in the office of Mr. Filley, and in Mr. Filley's presence; but whether that was before Mr. McLeod had completed the arrangements or after I don't know.

X Int. 9. Did you ever tell Mr. McLeod that Nation and Little had those patents?

A. It is possible; Mr. Little and myself were in Troy at one time; it is possible I did so.

392 X Int. 10. Didn't you tell him that if he would purchase those patents, so that he could license your company under the patents, that you would take such license?

A. I think not.

X Int. 11. Or that you would recommend to Mr. Filley to take them?

A. Well, I don't think I put it in just that way.

X Int. 12. Will you state how you did put it, please?

A. When Mr. McLeod was there I have no doubt I urged Mr. Filley to make the arrangement so we could make the reservoir. I don't think I told Mr. McLeod if he did buy them, because I feel tolerably positive that I didn't know anything about the arrangement of Mr. McLeod and Little and Nation until after he had made the purchase. That is my recollection of the matter.

X Int. 13. Why were those patents of Nation and Little included in the license of Bussey?

A. I cannot answer the question.

X Int. 14. Was there being included in that any inducement for you to take the license under the Bussey & McLeod's patent?

A. Well, only the inducement I referred to before was of Mr. Filley's necessities, at least our necessities, in order to help him out of his difficulties; that I was ready to make any compromise, as far as preventing getting into litigation in reference to the matter. I didn't think it was a time we could afford it, particularly as he wished time and again to discharge both of these men, which I bitterly opposed.

X Int. 15. Did you expect to repudiate these licenses as soon as you got an opportunity and as soon as your difficulties passed away?

A. No; that did not enter into my mind. It is possible that I didn't understand the matter in the way that it actually was at the time I urged Mr. Filley to take the license. I don't make a practice of making a bargain to repudiate it, or intended to do so.

X Int. 16. I don't know that it makes any particular difference why you repudiated it; but I should like to know why you did it.

A. Because we thought it was not our duty to pay it; that you had no right to your fee.

393, 396 X Int. 17. Was it because you thought Little and Nation had no right to their patent?

A. Exactly, to that particular patent.

X Int. 18. How was it about the right of Bussey & McLeod to their patent?

A. We didn't use it.

X Int. 19. Then, if you didn't use Bussey & McLeod's patent, you must have taken a license for the purpose of using the Nation and Little patents, did you not?

A. If they had a valid patent, I presume that would have been the way of it.

X Int. 20. When was the stove made covering the invention of the Little patents?

A. The first stove made covered by the sketch of Mr. Filley's was shipped by us——

X Int. 21. I do not ask when it was shipped; I wish to know when it was finished.

A. Probably completed it a day or two before; it was shipped the 24th of April, 1873, and probably completed three or four days before.

X Int. 22. Did that contain the low-down base plate attached to the body of the stove by hooks and lugs?

A. The same as shown in Exhibit G.

(Signed) J. W. BELL.

Defendants close testimony on their behalf.

397, 398 United States circuit court, eastern district of Missouri.

ESEK BUSSEY AND CHARLES A. MCLEOD, complainants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY, OF Saint Louis, defendant.
} In equity. No. 1039.

DEFENDANT'S EXHIBITS.

Sprague & Hunt, complainants' counsel; Sam'l S. Boyd, defendant's counsel.

Filed Sept. 17, 1878. M. M. Price, cl'k.

399 United States circuit court, eastern district of Missouri.

ESEK BUSSEY & CHAS. A. MCLEOD
vs.
EXCELSIOR MANUFACTURING CO., OF ST. LOUIS.
} In equity.

Defendant's Exhibits.

DEFENDANT'S EXHIBIT NO. 1.

UNITED STATES PATENT OFFICE.

William Davis and R. W. Lord. Cooking stoves. Patented November 23d, 1829.

The schedule referred to in these letters patent, and making part of the same, containing a description in the words of the said William Davis and R. W. Lord themselves of their improvement in the anthracite coal cooking stove.

The stove is so constructed as to admit of an open grate with its common principle of draught, that is, with a small aperture or flue immediately at the back of the grate and formed between it and the bottom of the oven.

400 There are flanges on the inside of the stove sides, forming grooves for the side bars of the grate frame to slide in; a back plate, attached to the under side of the bars, cast with and forming a part of the grate-frame, slides over the stove bottom so as to lengthen it when drawn out and prevent an opening.

The boilers are situated back of the oven in a vacuum, which receives the heat immediately from the flue and evacuates it through a larger avenue into the pipe situated over the centre of the oven for the purpose of more generally diffusing the heat; there is a small draught between the oven and front end of the stove, which may be opened and closed at pleasure.

The grate is drawn out to receive the coal, as well to perform many culinary operations. The oven is formed of two plates; the top plate forms an arc and rests on the ends on the bottom plate, which is underlaid with a slab of soap-stone, or fire-brick, or any other composition. The whole is mounted on scroll legs, on the inside of which, and at the bottom of the grate, are flanges supporting a sliding pan or hearth to receive the offal of the grate.

WILLIAM DAVIS.
R. W. LORD.

Witnesses:
GARRET T. BEEKMAN.
CONRAD BEAM.

(Here follow 2 diagrams marked pages 401–404.)

405 DEFENDANT'S EXHIBIT No. 2.

UNITED STATES PATENT OFFICE.

James Barron, of Philadelphia. Improvement in the galley or cooking stove for ships of war. Specification forming part of letters patent No. 422, dated October 6th, 1837.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, James Barron, of the county of Philadelphia, in the State of Pennsylvania, have invented a new and improved galley cooking stove, and I do hereby declare that the following is a full and exact description thereof:

Fig. 1 is a front view of my galley, the blower being removed for the purpose of exhibiting the grate C, which may be made of cast-iron, the front and bottom being separable and removable at pleasure, so that wood may be se substituted as fuel. B′ B′ B′ are ovens enclosed by doors, and furnished with suitable shelves for baking, there being a flue behind and above them leading to the stove-pipe or flue K. The bottoms of these ovens are exposed to the direct action of the fire. B B are side ovens, which may be attached at pleasure by means of clasps or hooks to the side plates of the galley, which form the oven backs, they not having any other back plate; they are furnished with shelves; the dotted lines show the place of one of them at B, Fig. 2, and the top plate is seen at B, Fig. 3.

The side and back plates and other parts of the galley are connected together by a suitable frame, E, Figs. 2 and 3, strained or held together by means of rods and nuts, and supporting the legs upon which
406 the whole stands. D is the hearth or lower plate of the galley, extending under the whole. Below this there is a drawer or drawers, G G, serving not only to prevent the action of the heat upon the deck or floor, but serving to heat and even bake articles when the fire is large or there is any considerable portion of ignited coal in the space F on the hearth or lower plate D, which is solid so that ashes cannot pass into the drawer G.

Fig. 2 is a side elevation of the galley, in which, where the same parts are seen as in the other figures, they are designated by the same letters of reference. A is the part occupied by one of the boilers, which is received within the outer plates of the galley, and is surmounted by a steamer L, placed in the ordinary way over it. There may be two or more of such boilers arranged side by side, as shown in the horizontal section Fig. 3, at A A A. The bottoms of these boilers rest upon the hearth D, and their fronts constitute the back of the fire-place, the fuel being in immediate contact with them.

To carry off the vapors I employ a hood or canopy O, which is supported upon rods and has the smoke-pipe K passing through it, and is perforated with holes at N to allow the steam to pass into it. From the edges of the canopy a curtain may extend down a little below the tops of the cooking vessels.

Without intending to confine myself to any particular size or dimensions, the scale on Fig. 3 will show what I deem a good proportion for the respective parts in a galley of the ordinary dimensions.

What I claim as my invention, and wish to secure by letters patent, is:

The manner of arranging the boilers in a ship's galley or cooking stove, so that one of their sides shall be directly exposed to the action of the fire, as described.

I also claim the placing of side ovens for baking, which receive heat from the outer plates of the galley, as set forth.

I claim the movable grate to substitute wood for coal.

I claim likewise the employment of a drawer or drawers in the manner and for the purposes explained, and also the construction and application of the canopy.

JAMES BARRON.

Witnesses:
G. I. PENDERGRAST.
HENRY M. PREVOST.

(Here follow 3 diagrams marked pages 407–412.)

413 DEFENDANT'S EXHIBIT No. 3.

UNITED STATES PATENT OFFICE.

Peter Getz, Lancaster, Pennsylvania. Improvement in the construction of steam apparatus for cooking stoves. Specification forming part of letters patent No. 1469, dated January 11th, 1840.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known I, Peter Getz, of the city of Lancaster and State of Pennsylvania, have invented a new and useful steam cooking stove, and I do hereby declare that the following is a full and exact description:

For a sizeable family stove I make the side plates about thirty inches in length, and the end plates about fifteen inches in width, and both about two feet high, the bottom plate sunk at the fore end as at L, for the purpose of adapting it to the use of either coal or wood. The oven part is formed as in ten-plate stoves, with a bottom, top, and end plate, having about ten inches of the back end of the stove for the boiler, marked A; this is made to fill all this space, except an inch at the bottom, back end, and top of the stove, as at M, No. 5 (as a draft for the smoke to the pipe at the fore end of the stove). Through the lower part of the boiler, opposite the fire, I place a number of tubes, B, say six or eight, of about an inch and a half diameter, and between this boiler and the fire is a perpendicular plate, N, with holes corresponding to the flues in the boiler. This plate is to prevent injury to the boiler by putting in fuel. In the boiler above these tubes is placed a cock (on one side) for the purpose of drawing off warm water when required, as at C. A notch is made
414 in one of the side plates which will permit this cock to raise out of the top when the boiler is withdrawn; this opening is closed by

a small slide plate or door D. A plate of about an inch in breadth, E, holds the hind end and side plates together; a plate of sufficient width to receive the pipe holds the front part together, F. A box of copper or sheet-iron, G is made to fit the top of the stove from the hind end to near the pipe; this box is about ten inches high and is called the steam-box. The top plate O had better be made of cast-iron to give it strength, as it must have a sufficient number of holes or openings to receive the kettles or boilers I. Out of the top of the first-mentioned boiler a pipe is made for the purpose of passing the steam into the steam-box. A small pipe, as at K, passes from the fore end of the box into the stove-pipe, by which the surplus steam escapes. This stove is best made of cast metal, except the several boilers and steam-box.

The advantages of this stove are, that the heat passing through the flues and round the main boiler causes the water in it to boil sooner than by any other method; the steam passing from this boiler into the steam-box, and the heat from the fire passing between the bottom of the box and the top of the oven at M causes the kettles in the box to boil soon, thus leaving the oven wholly to the use of roasting and baking.

No. 1, the whole stove.
No. 2, the large boiler.
No. 3, the top of the stove without the steam-box.
No. 4, steam-box under side.
No. 5, a section of the stove through the stove lengthwise.

What I claim as my invention, and desire to secure by letters patent, is the combination of the tubular boiler with the steam-chest G, the whole being constructed and arranged substantially in the manner set forth.

PETER GETZ.

Witnesses:
SAM. DALE.
HENRY METZGER.

(Here follows diagram marked page 415.)

416, 417

DEFENDANT'S EXHIBIT NO. 4.

UNITED STATES PATENT OFFICE.

P. P. Stewart, of Troy, New York. Improvement in cooking stoves. Specification forming part of letters patent No. 22681, dated January 18, 1859.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that I, P. P. Stewart, of Troy, in the State of New York, have invented certain new and useful improvements in cooking stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification; in which

Fig. 1 is a side elevation.
Fig. 2 a front elevation.

Fig. 3 a longitudinal vertical section, and

Figs. 4, 5 and 6, sections taken at the lines A *a*, B *b* and C *c* of Fig 1.

The same letters indicate like parts in all the figures.

My said invention relates to improvements on what is known as the return-flue cooking stove, in which the products of combustion pass over the oven in one sheet, divide, and pass down the back in two flues; thence under the bottom in two flues to the front, then turn the end of two partitions, unite, and return in one middle flue to the back and up the middle flue at the back to the exit pipe.

In such stoves the outside, back, and bottom plates which ; form one surface of the back and bottom flues, radiate much heat into the room, an effect which is desirable in winter but very obnoxious in summer.

418 Another defect of this class of stoves is that the heat radiated by the front of the stove is not sufficient for the purpose of roasting in a tin kitchen in front, the opening for fuel being through a door at the side. And the third defect arises from the difficulty of keeping hot water, for the reason that the fire chamber extends across the whole width, is placed near the front, and the plates surrounding it from part of the top of the oven, the front, bottom, and back plates thereof radiating heat into the oven, and in consequence the water heater, usually called the water back, can not be used.

The object of my invention is to remedy the defects above pointed out, while at the same I retain all the known and admitted advantages of this class of stoves.

The back and bottom direct and return flues have a false and movable back and bottom plates, which enclose the permanent back and bottom plates with an open space between them, that they may be put on in warm weather, when but little fire is used and it is desirable to prevent the radiation of heat into the room, that the heat instead may be confined and thus made to act with more intensity upon the oven plates; and that they may be removed in cold weather, when more fire is used and when it is desirable to warm the room. In this way the stove is adapted to summer and winter use, and made as efficient for the purposes of cooking in summer with a small as in winter with a large amount of fuel.

The first part of my invention consists in combining with a stove of this class doors in front, and of sufficient capacity to place an open roasting kitchen, so that the heat radiated by all the plates and the back, front, and bottom plates of the fire chamber may be employed for roasting in front, when combined with an end door, whereby the draught may be controlled without the aid and independent of the front doors.

And the second part of my invention consists in arranging with such a stove a boiler at the back, with two inclined flues having a removable cover which receive the products of combustion separately at each side, and form a flue chamber in which the middle back flue discharges, and passing up obliquely in each unite at or near the top, where the two flues unite to form the one connection with the pipe leading to the chimney. In this way I am enabled to obtain an amount of heating surface sufficient to keep up the requisite supply of hot water, a result which has never before been obtained in stoves of the kind specified.

419 In the accompanying drawings *a* represents the fire-place in front and extending entirely across the front end of the stove, with a door

b at one side for the supply of fuel. The front plates *c* of this fire chamber is near the front plate *d* of the stove, and the bottom plate *e* and back plate *f* and bottom plate *g* of the top flue *h* constitute the top of the oven *i*. This oven has doors, *j* at the side for access, and a door, *k* in front, which extends up nearly to the top of the fire-place, so that when this door is opened and a tin kitchen or roaster placed in front on the apron *l* the heat radiated by the several plates of the oven will aid the heat radiated by the front plate of the fire chamber in roasting, while at the same time the heat will be confined in the oven for the purpose of baking by the tin kitchen or roaster, which for the time being closes up the front aperture.

The top flue *h* at the rear end opens directly into an exit-flue chamber, *m*, through an aperture governed by a damper, *n*, which is opened to kindle the fire, or when it is not desired to heat the oven; but when closed then the top flue discharges into two diving side flues *o o* at the back, and these discharge into two side flues *p p* at the bottom, passing directly under the bottom plate of the ovens. And at the front end of the oven these two flues *p p* discharge into a return flue, *q*, placed between them and running back and discharging into a vertical flue, *r*, at the back and placed between the two diving or side flues *o o*, and the upper end of this discharges into the exit-flue chamber *m*. The back and bottom flues above described are made as usual in this class of stoves by the oven plates and back plate *s* and bottom plate *t* of the stove; and these are inclosed by a false back, *u*, and false bottom, *v*, whenever, as before stated, it is desired to prevent the heat from being radiated into the room. This false back *u* is made either of sheet or cast metal, with the edges fitting close to the surface of the stove, and with a flanch at top which enters under a cleat, *w*, on the under surface of the bottom plate *x* of the exit-flue chamber *m*, and then held in place at bottom by a pin, *y*, fitted to a hole in the bottom plate or by any well known catch; and the false bottom *v* has a rim all around, the upper edge of which fits up against the bottom plate of the stove, and it is provided with a lip, *z*, like a hasp, on each side, which fits over a staple on the bottom plate of the stove that it may be secured in place by bolts or pins passing through the eyes of the staples. The false back and bottom are so formed as to leave an inner space between them and
420 the stove back that the air contained therein may act as a non-conductor to prevent the radiation of heat into the room.

The top plate *a′* of the stove extends back over the exit-flue space *m*, and besides the usual boiler holes it has a large hole, *b′*, to receive a large boiler, *c′*, formed with two flues, *d′ d′*, which pass through the bottom, one near each side, and run up oblique through and to the top of the boiler, where they unite in one, as at *e′*, to connect with the usual stove-pipe or chimney. As the gaseous products of combustion enter the flue space *m* from the middle back flue they must spread and act under the bottom of the boiler to get to the two flues in the bottom of the boiler, through which they ascend to the pipe.

The boiler *c′*, as shown by the drawings, has a removable or hinged cover, thus allowing easy access to its interior for the supply or removal of its contents and the making of it closed or tight, as occasion or use may require.

In this way the heated gases not only act efficiently against the entire bottom of the boiler, but inside thereof through two flues, which have their heating surface increased by being inclined to form the single connection with the chimney.

What I claim as my invention of improvements on the well known return-flue stove herein specified is:

In combination with a stove such as described, making the front plate of the oven open, with doors and an apron to receive and hold a tin kitchen or a roaster substantially as specified, that the heat radiated by the front plate of the fire chamber may be aided by the heat radiated by all the oven plates, as specified, when combined with an end door, whereby the draught may be controlled without the aid and independent of the front doors.

And I also claim the boiler, having a removable cover and two inclined flues, which are separate at the lower end, and united into one at the top to connect with the chimney, substantially as described, in arrangement with the exit-flue space to which the boiler is fitted, and into which the gaseous products of combustion are discharged from the series of direct and return flues, substantially as and for the purpose specified.

P. P. STEWART.

Witnesses:
J. H. KELLOGG.
JOHN HOBART WARREN.

(Here follows diagram marked page 421.)

422, 423 DEFENDANT'S EXHIBIT NO. 5.

UNITED STATES PATENT OFFICE.

Daniel E. Paris, assignee of Samuel B. Spaulding, of Brandon, Vermont. Improvement in cooking stoves. Specification forming part of letters patent, dated June 22, 1858. Additional improvement, dated May 17, 1859. Reissue No. 2291, dated June 19, 1866.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that Samuel B. Spaulding, of Brandon, in the county of Rutland, and State of Vermont, did, on the 22d day of June, A. D. 1858, obtain letters patent upon certain new and useful improvements in cooking stoves, and bearing the title of "Improvement in Cooking Stoves," and also that the said Samuel B. Spaulding, after the issue of said letters patent, added to the same, in due form of law, a description of an additional invention, which was annexed to and included in said letters patent, which letters patent have been duly assigned to Daniel E. Paris, of the city of Troy, county of Rensselaer, State of New York, by which assignment the said Daniel E. Paris has become and is the true and lawful owner of the same, and his entire interest to said invention, improvements, and patent; and I, the said Daniel E. Paris, assignee of said patent, do hereby declare that the following is a full, clear, and exact description of said invention and improvements, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which drawings are a part of this specification.

Like letters represent or refer to like or corresponding parts.

Fig. 1 is a sectional view of a cooking stove containing my invention or improvement for heating a reservoir or water tank back of the stove.

424 Fig. 2 is a view of the damper, which regulates the admission of the heat beneath and against the reservoir, as hereinafter set forth.

Fig. 3 is a view of a section of said stove along the red line A B, Fig. 1.

Fig. 4 is a sectional view of a cooking stove with my invention and improvements for conducting the heat under the hearth in front of the stove.

Fig. 5 is a horizontal view of the stove shown in Fig. 4, with the firebox and oven removed, and showing the manner in which the heat is conducted under the hearth, as hereinafter described.

Fig. 6 is a modification containing said improvements applied to the back of the stove, substantially as herein described and set forth.

Fig. 7 is a section of Fig. 6 along the red line C D.

The nature of said invention consists in extending the flues of a square-shaped or diving-flue cooking stove so as to conduct the heat and products of combustion under the bottom of a reservoir or water tank, and against the same, previous to the escape of said heat and products of combustion into the exit pipe when the whole or a part of the reservoir is below the surface of the stove and in rear of the back flues thereof, substantially as hereinafter described.

It also consists in the employment in a cooking stove of a return flue so constructed that it will conduct the heat and products of combustion under the bottom of a reservoir, and against the same, and thence back to the exit pipe, when the whole or a part of the reservoir is situated below the top of the stove and in rear of the back flue or flues thereof, substantially as hereinafter described and set forth.

It also consists in the arrangement of a damper so arranged and operated that the heat and products of combustion willpass under the bottom of said reservoir, and against it, and thence into the exit pipe, or will pass directly into the exit pipe by a proper adjustment, substantially as hereinafter described.

It also consists in extending the flue or flues of a common cooking stove under the hearth in front of the stove, substantially in the manner hereinafter described and set forth.

It also consists in the formation or arrangement of an aperture or opening, one or more, and of any required or convenient size or capacity, in and through the rear or back outer and vertical end plate of the stove, and which forms the end vertical flue or flues between such plate and
425 the back end oven plate of the stove and the bottom flue or flues
directly under the oven, so as to permit and allow the heat or heated air, or escaping products of combustion, to pass therefrom through such aperture or opening, and thereafter come upon and in contact with the reservoir or water tank, and thus and thereby warm or heat to any required degree the water within said reservoir or water tank.

It also consists in the arrangement of a plate or chamber projecting in a horizontal direction outward from the rear or back end of the stove, and constructed with openings or a hole of any desired capacity and in the top thereof, and which shall be below the top plate of the stove, so as to receive said reservoir or water tank, while the bottom of such reservoir shall of itself form and make the covering of such plate or chamber containing such openings or hole, and thereby complete the hot air chamber immediately below such plate, and at the same time the aforesaid reservoir or water tank may form a part of the outer casing of the rear flue or flues if deemed best so to do in order to carry out more fully and perfectly the invention aforesaid and herein described and set forth.

It also consists in the construction and arrangement of a warming or hot-air chamber or closet under the bottom flue or flues immediately below the oven of the stove, and extending down to the floor, and having the aforesaid bottom flue or flues of said oven projecting downward to any required distance into such chamber or hot-air closet in such manner as to more quickly and thoroughly heat the said closet or chamber for the purpose of warming or keeping warm such things as may be placed therein for that purpose, and also for drying any and all kinds of fruits as may be desirable, and which being so constructed shall constitute the foundations whereon such stove shall rest or be supported, in the manner substantially as hereinafter described and set forth.

To enable others skilled in the art to which said invention and improvements relate to make and use the same, I will here proceed to describe the construction and operation thereof, which is as follows, to wit: A, Fig. 1, represents the fire-box of a cooking stove; B, the oven; C, the passage from the fire-box to the ash-box; D, the ash-box, which is separate from the stove and placed on rollers for convenience in removing the ashes; E is a reservoir or water tank placed in the rear and below the top of the stove; I is the exit flue of the stove, and J the middle flue extending under the oven.

In a stove constructed according to said invention, I extend the 426 middle flue J beyond the back of a stove to a distance equal to the width of the reservoir, which may be supported over said flue, either by extending the bottom of the stove for that purpose, as in Fig. 1, or by attaching the reservoir to the back of the stove over such flue, substantially as shown in Figs. 6 and 7. In the said extended flue I place the sliding plate or damper E, of the same width as the flue, and which extends from side to side thereof. It will be seen that when the damper F is pushed in the entrance from the middle flue J to the exit pipe I is closed, and the heat and products of combustion are conducted under the damper F through the space L to the bottom of the reservoir E, and against it and back over the damper through the space M to the exit flue I. The course of the draught is indicated by the arrows in Figs. 1 and 6. This course is also shown in Fig. 3, where H H represents the side or diving flues of the stove, and G the middle or exit flue, the arrows showing the direction of the draught. The advantages of this arrangement are that by the use of the damper the water in the reservoir may be heated or not, at pleasure, and without interfering in the least with the other operations of the stove. Figs. 6 and 7 show a modification of said invention and improvement, presenting substantially the same features as are shown in Fig. 1, except that the reservoir, instead of being supported over the extended flue by an extension of the bottom of the stove alone, is attached to or sits upon the outward projection or extension of the vertical flue or flues of the back end of the stove constructed for that purpose.

A, Fig. 4, represents the fire-box, and B the oven of a three-flue cooking stove. I construct the flues under the oven, so that they pass under the hearth, as is shown in Fig. 5, which represents the horizontal flues of the stove, H H being the side and F the middle flues. The hearth may have boiler holes if desired, as at A A.

The arrows show the direction of the draught. By placing a boiler, E, on one of the holes, A (Fig. 2), the waste heat from common cooking will pass under the boiler and against it, and the same will be more or less heated, according to the amount of fuel used for other purposes. This arrangement of the flues and hearth renders it very convenient to warm water or to keep dishes warm over the hearth while others are cooking on the top of the stove, and it is an important consideration that there is no other extra expense from the consumption of fuel.

I construct and arrange the aforesaid hot-air closet or chamber
427 C immediately under said stove, between the said bottom flue or
flues and the floor of the room where said stove is to be used, and of any capacity which may be deemed desirable. The outside casing or plates thereof, which forms the sides and ends, may be made of cast or sheet iron, or of tin or other suitable material, the lower edge whereof will rest down and upon the floor of the room where such stove is used, while upon the upper edge thereof will rest and remain the said stove, while the bottom flue or flues x underneath the said oven will project downward somewhat into such closet or hot-air chamber substantially as seen at x, Fig. 4, in dotted lines, so thus a hot closet or chamber for warming or drying is constructed and completed of considerable value and utility. The sides and ends of such closet or chamber may be ornamented with any design or configuration which may be deemed suitable. The corners of said surrounding casing by which said closet or chamber is constructed may be bolted, riveted, soldered, or otherwise put together by any suitable means.

I wish it distinctly understood that the aperture, hole, or opening L M may be any suitable or convenient size, form, or shape, and it may be put into any part or place of the aforesaid back end vertical plate of said stove, which forms and makes complete the said vertical flue or flues of such stove, which may be considered more suitable and convenient for the purposes hereinbefore stated and set forth. The said aperture or opening is in and through said plate at or near the lower part thereof, or at any other place or point between the bottom and top thereof, as may be deemed desirable for the sole and express purpose of conducting the heat, hot air, or products of combustion into a suitable chamber or space underneath or surrounding the lower part of said reservoir or water tank, so that such heat thus admitted shall come in direct contact with the bottom or other exposed portions of said reservoir or water tank, as the case may be, when such water tank or reservoir is arranged in whole or in part below the top of the cooking stove, and thus thereby heat the water therein contained to any degree of heat desired and for any purpose required. It is quite manifest that the invention aforesaid may be applied to any and all kinds of cooking stoves, irrespective of the kind or number of flues which the same may contain, without in the least changing the main features or character of the same. I have, however, deemed it best to show in the

accompanying drawings a common three-flue cooking stove. It
428 will now here be observed that the aforesaid aperture or opening
in the said vertical and back or rear end plate may be of any form, size, or capacity required in order to carry out the main object or purpose of said invention and improvements, and the same will be seen and better understood by reference to and inspection of the accompanying drawings at L and M, Figs. 3, 6, and 7. It will there be seen that the aforesaid aperture or opening is constructed in and through said vertical rear end plate of the stove, and for convenience is made below the center line of such plate, and communicating with the center flue, because there are three flues represented in said drawings, to wit, H, G, H, but if only one horizontal and vertical flue were shown, and that a broad or sheet flue, then the aforesaid aperture or opening might, if deemed best so to do, extend the full width of the said stove, and in height to any desirable point in the said back or vertical end plate, and thus and thereby carry out the real and substantial features and object of said inventions and improvements as hereinbefore described and set forth; nor is it at all essential or material as to what exact or precise point in the said vertical and external end plate said aperture, opening, or openings is or are made, so long as the heat passes through the same, and in any manner whatever or thereafter come' in contact with said reservoir or water tank, or any portion thereof, in the manner and for the purposes substantially aforesaid. The heat passing through such aperture or opening, or openings, for the purposes substantially as aforesaid, will in all cases be regulated by a damper suitably constructed and arranged for the purposes herein described and set forth. It will be located and operated in accordance to the location of and in combination with the aforesaid aperture, opening, or openings in and through the said vertical rear or end plate, as aforesaid described and set forth.

It is also manifest that the aforesaid outward projection containing the hot-air chamber herein described and upon which the said reservoir or water tank is placed and supported, with the whole or part thereof below the top plate of the cooking stove, or any substantial and material equivalent thereof, may be of any size, shape, or capacity which will answer the purposes aforesaid, and it may be cast with or attached to the said stove in any way, or by any mechanical means deemed best to use, and without changing in any way or manner the improvements aforesaid.

By the arranging of the said reservoir or water tank upon the
429 immediate rear end of such stove, and with the same in part or entirely below the top plate of the stove, and in bringing the heat aforesaid in direct and positive contact with any part or portion of such reservoir or water tank by means of the removing of a part or portion of the said outward vertical end plate of the stove, substantially as herein described and set forth, there will be very great economy in the use of fuel for the heating of water in large quantities for washing or for other purposes, and at the same time obtain that degree of heat to such water often desirable, and not heretofore obtained by other reservoirs or water tanks used prior to the making of the invention and improvements herein described and set forth, and which were fully shown in and by the drawings attached to the original patent, dated as aforesaid.

There are other modifications of the said invention and improvements which I have not deemed essential to herein describe, as all the material and more important features of said invention are easily understood by the reading of this specification and claims and an inspection of the accompanying drawings.

The said reservoir or water tank E may be constructed of any size or shape, and of any suitable material which will answer the required purposes and conform to size, form, or shape of the said rear vertical end plate in and through which such aperture, opening, or openings are formed or constructed as aforesaid, and wherever it rests upon or against and covers up any aperture, as hereinbefore described and set forth, it will be so made as to closely fit the same, and thereby prevent the escape of smoke or waste of heat or of other products of combustion into the room when such stove is being used.

Having thus described the construction and operation of the original invention of said Samuel B. Spaulding, what I claim as his invention and improvements is—

First. The extending of one or more of the flues of a square-shaped or diving-flue cooking stove so as to conduct the heat and products of combustion under the bottom of a reservoir or water tank, and against it, before the same passes into the exit pipe, when the said reservoir is placed wholly or partially below the top of the stove and in rear of the back flue or flues thereof, substantially as herein described and set forth.

Second. I also claim a return flue so constructed that the heat will be
conducted under the bottom of a reservoir or tank, and thence back
430 to the exit flue or pipe, and when the whole or a part of the reser-
voir is placed below the surface of the stove, and in rear of the
back flue or flues thereof, substantially as herein described and set forth.

Third. I claim the damper F so arranged and operated as to throw the heat and products of combustion under the reservoir E and against it, or by a proper adjustment or change of position thereof to allow the same to pass directly into the exit pipe I, substantially as herein described and set forth.

Fourth. I also claim constructing the flues which pass under the oven of a cooking stove in such a manner that the heat and products of combustion will pass under the hearth in front of the stove, substantially in the manner and for the purposes herein described and set forth.

Fifth. I claim the hot-air chamber projecting out from and situated immediately in the rear end of the stove, and back of the flue or flues connected therewith, by means of an aperture or opening in and through the rear end and vertical plate of the cooking stove, so as to permit or allow the heat or heated air or escaping products of combustion to pass through the same into such chamber or its equivalent, and thereafter come in direct contact with the reservoir or water tank, arranged for the purposes substantially as aforesaid.

Sixth. I claim an open seat or outward projecting chamber, which shall receive and contain said reservoir or water tank, and formed on the back end of a cooking stove, so that such reservoir shall itself form the covering or a part of the outer casing of the rear flue or flues and of the said hot-air chamber combined, and just below the same, in the manner substantially as herein described and *and* set forth.

Seventh. I also claim the arrangement of an aperture, opening, or openings, constructed in and through the rear vertical end plate of the stove, so that the heat, hot air, or escaping products of combustion may be the means thereof, come in positive contact with the bottom or other exposed parts or portion of said reservoir or water tank and thereby heat or warm the water therein, substantially as herein described and set forth.

Eighth. I claim the arrangement of a reservoir or water tank with the whole or part thereof, sustained or supported substantially as herein described and set forth, in combination with an aperture, or opening or openings, in and through the rear vertical end plate of said stove, for the purposes substantially as herein described and set forth.

(Here follows diagram marked page 431.)

432, 433 Ninth. I claim the arrangement of a hot-air or warming or drying chamber or closet, directly underneath the bottom of the cooking stove, in combination with the downward projecting bottom, *x*, of the horizontal flue or flues of the stove into such chamber or closet, in the manner and for the purposes substantially as herein described and set forth.

Tenth. I claim the suspending and supporting of a cooking stove, without the use of the ordinary legs, upon the surrounding casing or box C, which forms the hot-air or drying chamber or closet between the same and the floor, substantially as herein described and set forth.

In testimony whereof I have, on this 27th day of April, 1866, hereunto set my hand.

DANIEL E. PARIS.

Witnesses:
CHARLES D. KELLUM.
R. W. REILLEY.

434 DEFENDANT'S EXHIBIT NO. 6.

UNITED STATES PATENT OFFICE.

Esek Bussey, of Troy, New York. Boiler for cooking stoves. Specification forming part of letters patent No. 56488, dated July 17, 1866.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that I, Esek Bussey, of the city of Troy, in the county of Rensselaer and State of New York, have invented a new and useful improvement in cooking stoves, of which the following is a full and exact description, reference being had to the accompanying drawings, in which—

Fig. 1 is a side elevation;

Fig. 2 a partial, central longitudinal sectional elevation; and

Fig. 3 a perspective view of a detached hot-water reservoir, all of a cooking stove, illustrative of my said invention; and

Figs. 4, 5, 6, and 7 are central longitudinal sectional elevations of four other stoves, illustrating my said improvement; similar parts being marked by like letters in all the figures, and the arrows therein being indicative of the courses in which the gases of combustion pass through the stove.

The nature of my invention consists in the employment of a water reservoir or tank, constructed of cast-iron, and covered upon its inner and outer surface by a composition of zinc and tin, or with zinc alone, in the manner and for the purposes substantially as herein described and set forth, and the combination of such water reservoir or tank with a cooking stove in the manner substantiall' as shown in the accompanying drawings.

It also consists in constructing a water reservoir or tank for
435 cooking stoves of cast-iron, coated or covered upon its inner and
outer surface by zinc or an alloy of zinc and tin, in the manner substantially as herein described and set forth, so that the same shall neither rust upon the inside by reason of any use thereof, or become coroded upon the outer surface of the same by the action of any heat, vapors, or gases coming in direct contact with the same, in the manner substantially as herein described and set forth.

In carrying my said improvements into operation, I alloy and coat the cast-iron body A (Figures 3, 4, 5, 6, and 7) of the reservoir on its inner surface, *b*, and on its outer surface, *c* with zinc or an alloy of zinc, by any suitable means. For example, by first putting the same in dilute muriatic acid and scouring the cast-iron body until its inner and outer surface are clean or free from scale; and then drying and warming the so cleaned cast-iron body, and next dipping, stirring, and rubbing it in a bath of melted zinc or an alloy of zinc, with a flux of sal-ammoniac on top, until the inner and outer surfaces of the cast-iron water reservoir body become thoroughly covered and coated with the zinc or alloy of zinc of the bath. An alloy of zinc, consisting of 200 pounds of zinc and 10 pounds of tin, melted together, I have found from experience forms a very good and cheap bath for use in covering and coating the inner and outer surfaces of the cast-iron body of said reservoir.

And in carrying out my aforesaid improvements, I shape and arrange a fire-flue or fire-place, D, in respect to a fuel chamber, E, a top cooking plate, F, an oven, G, an exit passage, H, and the water reservoir A, in any suitable manner, and so shape and arrange the said reservoir A that it shall form any suitable part of the casing of the said fire-flue or fire-flues; and that the flame or hot gases and vapors of combustion which shall circulate through the said fire-flue or fire-flues shall come in direct contact with the coated and alloyed outer surface *c* of the reservoir, either in any suitable part, as indicated by examples in Figs. 2, 5, and 7, or wholly as illustrated in Figs. 4 and 6. In the aforesaid drawings, I is a hinged lid or cover on the open top of the reservoir A.

My aforesaid invention is of great practical utility in the following particulars, viz:

1st. By my said improvements a combination of a more durable water reservoir with a cooking stove is produced, which, while costing only a
little more than if the reservoir was of cast-iron alone, and of equal
436 weight, strength, and capacity, has the inner surface of the reservoir less liable to become rusty or dirty by the oxydizing action
thereon of the water, steam, and air in the reservoir than if the reservoir were of cast-iron; and which has the metal of the reservoir less porous on its inner and outer surface, and much less liable to become corroded by the oxydizing action of the steam, water, and air in the reservoir, and by the penetrating and corroding action of the hot acid, vapors, and gases of combustion, which come in direct contact with the outer surface

of the reservoir in the stove, than if the reservoir were made of cast-iron alone.

2d. By my aforesaid improvements, a combined cooking stove and hot-water reservoir is produced, which, while costing less than if the reservoir were of copper, zinc, brass, or alloy of zinc and tin, has a reservoir which is nearly or quite as free as one if entirely constructed of zinc, brass, copper, or an alloy of zinc and tin would be from being oxydized or rusted on its inner surface by the water, steam, or air in the reservoir; or from being corroded on its outer surface by the chemical action of the flame, or hot vapors, or gases of combustion which come in direct contact with the outer surface of the reservoir in the stove; or from being melted by the intense heat of such flame, or gases, or vapors of combustion, whenever the water shall become very low or entirely gone from within the reservoir.

And 3d. By my aforesaid invention, I construct a cooking stove having a permanent reservoir combined therewith, in which water is heated more directly to a greater degree, as well as more economically, than would be the case in a cooking stove having a reservoir composed of a body of cast-iron coated and alloyed on its inner and outer surface with zinc or an alloy of zinc, and arranged or placed on the stove with a metal plate or casing between the outer surface of the reservoir and the flame or hot gases of combustion in the stove, so that such flame or hot gases of combustion could not come in direct contact with the coated and alloyed outer surface of the water reservoir.

What I claim as my invention and desire to secure by letters patent is:

First, I claim a water reservoir or water tank constructed of cast-iron, and entirely covered or coated upon the inner and outer surface thereof by zinc or an alloy of zinc, substantially as aforesaid, in combination with a cooking stove in the manner substantially as herein described and set forth.

(Here follows diagram marked page 437.)

438, 439 Second. I claim the water reservoir or tank for cooking stoves constructed entirely of cast-iron, and then covered or coated upon the inner and outer surface with zinc, or an alloy of zinc and tin, in the manner and by the means and for the purposes substantially as herein described and set forth.

ESEK BUSSEY.

Witnesses:
CHAS. W. ROBINSON.
H. S. McLEOD.

440 DEFENDANT'S EXHIBIT NO. 7.

Specification of English letters patent granted John Barlow for cooking apparatus, July 2d, 1816. No. 4044.

To all whom these presents shall come I, John Barlow, of Sheffield, in the county of York, founder, send greeting:

Whereas His Most Excellent Majesty King George the Third, by his letters patent, under the great seal of the United Kingdom of Great

Britain and Ireland, bearing date at Westminster the second day of July, one thousand eight hundred and sixteen, in the fifty-sixth year of his reign, did give and grant unto me, the said John Barlow, my executors, administrators, and assigns, his special license, full power, sole privilege, and authority that I, the said John Barlow, my executors, administrators, and assigns, during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the town of Berwick-upon-Tweed, my "new or improved cooking apparatus;" in which letters patent there is contained a proviso obliging me, the said John Barlow, under my hand and seal, to cause a particular description of the nature of said invention, and in what manner the same is to be performed, and to cause the same to be enrolled in His Majesty's high court of chancery within two calendar months next and immediately after the date of the said in part recited letters patent, as in and by the same, relation being thereunto had, will more fully and at large appear:

Now, know ye that, in compliance with the said proviso, I, the said John Barlow, do hereby declare that the nature of my said invention, and the manner in which the same is to be performed, is described and ascertained by the drawings in the margin of these presents, and by the following explanation, that is to say:

Figure 1 represents a front view of my cooking apparatus, uniting an oven and boiler to a kitchen range without contracting fireplace, so constructed that they will perform all the common operations 441 of oven and boiler with a very small quantity of fuel. A, the oven door; B, the front of boiler side; C, aperture for filling boiler; D D D, the bars of the range (with or without a falling one); E, a falling trevet or lip, which, when not in use is turned up, and is fastened to and forms a part of the moving cheek F, which is moved by the usual means of a rack and pinion, generally placing them immediately under the oven, and connecting the rack and cheek through the bottom grate as is usual, when the movement is placed below the grate; G, the small door for cleaning the flue. In the construction of this apparatus, I use a cast-iron oven, such as is well known by the name of poker oven. One of its sides forms one side or end *end* of the fire-place, on which is cast a projecting piece or poker, H, of a length and thickness proportioned to the size of the oven. For ovens of middling size this poker will generally project from three to four inches, and be about one inch and a half in diameter, and made strongest or thickest at its root. In the inside of this oven and at a small distance, say, about half an inch from the side next to the flue, I place a plate of cast or wrought iron or other proper substance, in which I make a number of perforations. This plate forms by means of two small ledges or stripes, a groove or space between itself and the oven side, for the sliding part of a spit rack to move in, and the front edge of it may be returned or otherwise formed to cover the space or cavity made or seen at I I. It also serves to break or correct the too sharp or searching heat of that side of the oven, and give a current of heated air through the oven by means of perforations in the returned part I I, and a valve, stop-cock, or ventilator, placed at the opposite side or corner of the top of the oven.

The groove or space or cavity for the sliding part of the rack on the boiler side, I place immediately below the bottom of the boiler, and join the sliding and rack parts at right angles, thus ⌊; making the rack parts of equal lengths for the sake of uniformity. But though I here describe one mode of fixing spit racks (when required), which appears most suited to the construction of this apparatus, I do not confine myself to it, but use any of the methods commonly practiced of which the apparatus is capable. To prevent the action of cold air on the top of the oven, a plate or cap of cast or wrought iron or other proper substance may be placed on it. When the oven is required to be made of great depth backwards, I cast an extra projecting piece or poker near the back part of the oven 442 on the same side as the other, so that when fixed and in use, it projects into the flue, at a small distance behind the grate at L, Figure 2. I ventilate the oven in any of the usual ways.

Figure 2 is a perspective view of the boiler before it is fixed to the range, which forms one side or end and the back part of the fire plate. At L is an opening, which is the commencement of the flue.

Figure 3 represents a back view of said boiler; the arrow shows the course of the flue which, being brought through the corner at M, is conducted horizontally on the whole length of the boiler to N, and is then turned up the chimney in the common way.

Figure 4 shows the end view of the boiler farthest from the oven, with a section of the flue; when turned upwards the part O is to facilitate the cleaning of it at the small door to Figure I; the cleaning is performed with a brush in common use, made in the manner of a bottle brush, but larger and with joints in it. When the front part of the boiler P, Figure 2, is very wide to contain a greater body of water in order to accelerate the boiling of it, I form section of the flue in the back part of the boiler, by which means a greater surface of water is exposed to the action of the fire; but if the front part P is not required to be large and uniformity of appearance is desired, I make or convert that part of the boiler cover Q, Figure 1, which is unoccupied by the boiler, into a small hot plate ironing or stewing stove, to be heated either by the boiler flue or by a separate fire in the usual way; I prefer the latter mode. I use any material in the manufacture of my apparatus that is suitable for the purpose, and though I usually make the flue of iron, it may be made in brick-work to answer the purpose. I place a damper in any part of the flue most convenient between the top of the boiler B and S, Figure 4. I make the range or bars in the common way, only the cheeks or standards reach to the ground to form the necessary fastenings for the fronts by screws, rivits, or otherwise. The bottom grate is supported by two cheeks, frames, or back legs; the boiler cover T T, Figure 1, is fitted so as to be steam-tight, as is likewise the small lid at C if the apparatus be wanted to produce steam. I make the boiler with or without a cock, with a feeding cistern or or without, and if necessary adapt it for warming baths or apartments, or cooking by steam. I generally approve of using a loose back or stout plate of cast iron, or other proper material, which is placed against and covers that part of the boiler where the fire is kept in

(Here follows diagram marked page 443.)

444, 445 range V, Figure 2; and at the entrance of the flue L, Figure 2, I and place a grate, W, Figure 1, which from its sloping position, and by means of a rebate on its edge next the boiler, retains its place; it therefore can be easily removed for cleaning the flue or renewal when injured. But as the ashes and small cinders will fall through this grate into the flue, I make an ash-pit as represented at X, Figure 3, immediately behind the grate W, Figure 1; and to prevent a current of air passing through this into the flue, I place a damper or small door in it, X, Figure 1. It may be observed that although separate parts of this apparatus have been in use before, yet the arrangement and combinations are new, and produce considerable advantages not possessed by any other cooking apparatus.

In witness whereof I, the said John Barlow, have hereunto set my hand and seal, this ninth day of August, in the fifty-sixth year of the reign of our Sovereign Lord George the Third, by the grace of God, of the United Kingdom of Great Britain and Ireland, King, Defender of the Faith, and in the year of our Lord one thousand eight hundred and sixteen.

JOHN BARLOW. [L. S.]

JAS. STEPHEN.

And be it remembered that on the same ninth day of August, in the year above mentioned, the aforesaid John Barlow came before our lord the King in his chancery, and acknowledged the specification aforesaid, and all and everything therein contained in form above written. And also the specification aforesaid was stamped according to the tenor of the statute in that case made and provided.

Inrolled the same ninth day of August, in the year above written.

---

446 DEFENDANT'S EXHIBIT NO. 8.

UNITED STATES PATENT OFFICE.

Richard M. Hermance, of Troy, New York, assignor to Joseph B. Wilkinson, of same place. Improvement in cooking stoves. Specification forming part of letters patent No. 102462, dated April 26, 1870.

To all whom it may concern:

Be it known that I, Richard M. Hermance, of the city of Troy, county of Rensselaer and State of New York, have invented certain new and useful improvements in cooking stoves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters of reference marked thereon, which drawings are made a part of this specification, and in which—

Figure 1 represents a vertical lengthwise section of a stove with an extended top, water reservoir or tank, shown inside of a chamber or flue space, and the back plate thereof having apertures to admit hot air and the products of combustion to said chamber, and the exit pipe shown back of the reservoir. Fig. 2 represents a vertical lengthwise section of the back end of the stove, showing the flue space or chamber, similar to Fig. 1, but having the water reservoir removed. Fig. 3 represents a similar construction of the flue space or chamber and water reservoir, but having the exit pipe placed forward of the water reservoir and over the back flue or flues, as it may be, in a stove having either one, two, or three back vertical flues. Fig. 4 represents a horizontal view of the extended top plate of the stove, showing the opening for the reservoir, and the collar or exit pipe back of the reservoir, and dotted lines showing the position of the exit pipe when placed in front of the reservoir. Fig. 5 represents a vertical lengthwise section of a portion of the back end of a stove, showing the opening in the back plate of the 447 stove enlarged, so as to reach from the bottom of the flue space or chamber to the top plate of the stove. Fig. 6 represents a vertical transverse section of the same arrangement, and shown as adapted to a stove having one, two, or three back vertical flues. Fig. 7 represents the vertical rear end plate of the stove, showing the apertures through which the hot air and products of combustion pass to the flue space or chamber surrounding the reservoir. There are two of these openings shown, but they might be both united and thus form one aperture, and they may also be extended each side, as shown by the dotted lines. Fig. 8 represents a vertical section of a water reservoir not having the top plate of the stove extended. In this case, as shown, the water reservoir rests on the top of the side and back walls of the chamber or flue space by means of a flange around the top of the reservoir or some equivalent thereto. Fig. 9 represents a vertical section of a water reservoir having a flue space or chamber carried under and up the back of said reservoir, forming the covering of the horizontal portion, and the back wall of the reservoir forming the front wall of the vertical portion of said flue space or chamber. Fig. 10 represents a vertical section of a stove, lengthwise of the back end, showing the water reservoir, chamber, etc., placed above the top end of the stove. Fig. 11 represents a vertical section of the same stove illustrated in Fig. 10, showing the sliding damper at the back of the stove. Fig. 12 represents on outside view of the vertical back end plate of the stove and reservoir above, showing the check-draft damper. Fig. 13 represents the water reservoir for this said stove in perspective, and separate from the stove, showing the apertures for the escape of steam, and the flanges formed thereon. Fig. 14 represents a peculiar construction of the back vertical plate of the stove, which is shown as bent, or so constructed that it may be a part or the whole of the casing which surrounds or forms the chamber within which the water reservoir is situated. The foregoing illustrations are referred to to show the character, construction of parts, and manner of fully carrying my said invention into practical use and operation.

The nature of my invention, as embodied in this application, consists: First, in a casing surrounding a water reservoir, when the reservoir is set in the top of the stove, and in the rear or at the back thereof. It further consists in a casing surrounding a water reservoir 448 when the same is placed above the top of the stove. It further consists in conducting the heat and products of combustion from a cooking stove around the bottom and sides of a reservoir placed at the back of the stove, and in the top plate thereof, in such a manner that the same will circulate freely upon all sides of the said reservoir. It further consists in conducting the heat and products of combustion from a cooking stove around the bottom and sides of a reservoir placed entirely above the top of the stove in such a manner that the same will circulate freely upon all sides of the said reservoir. It further consists in placing the exit pipe of a three-flue or diving-flue cooking stove in a casing surrounding a reservoir, so that the same may be heated by a direct draft. It further consists in removing or omitting a part of the back or vertical plate of a cooking stove, thereby forming apertures to admit heated air, smoke, and the products of combustion from the rear or vertical flue or flues against a water reservoir in the rear or back of the stove and set in the top plate of said stove. It further consists in the location of a water reservoir or culinary boiler, with regard to the back or vertical flues or flue of a cooking stove, when said reservoir is situated in the rear of and wholly below the top extended plate adjoining the flues, and suspended by a rim or flange to or in said extended plate. It further consists in bending the rear or vertical plate of a cooking stove above the bottom oven plate for the purpose of making a hot-air chamber on one or all sides of a water reservoir. It further consists in the location, construction, and use of a check damper, or its equivalent, in the rear vertical casing of the hot-air chamber, containing a water reservoir, whether such chamber is below or above the top plate of the stove. It further consists in a diving-flue cooking stove, with the exit flue constructed across the bottom and up the rear upright side of a tank, reservoir, or other culinary vessel.

To enable others skilled in the art to make and use this invention I will proceed to describe the same with reference to the drawings.

Figure 1 of the accompanying drawings represents a common three-flue cooking stove, in which the top plate H is extended beyond the line of the back of the stove far enough to admit of an opening, M, of the size of the top of the water reservoir E, and back of that another opening, G, forming the entrance to the exit pipe. I prefer to place the said reservoir in this opening supported by a rim; but, if desirable, it may be placed under the extension of this top, which should then have an opening of 449 convenient size for filling and emptying the reservoir. Under the extended top and around the reservoir I construct the casing F, Figs. 1 and 2, of sufficient size to permit a free passage of the products of combustion from the fire on all sides of the reservoir. In front of the casing is the opening K, by which the products of combustion are conducted from the middle flue C of the stove into said casing, and thence around the reservoir to the exit pipe G. I prefer to place the exit pipe at the back of the water reservoir, as shown in the drawings, but it will be seen that if it is placed in the front of the reservoir, at H^1, there will be no difference in principle. F′ is a hot-air chamber, entirely surrounding the water reservoir or tank E. L, Fig. 1, is a damper, by the opening or closing of which the draft is admitted to or excluded from the middle flue C of said stove. B is the oven and A the fire-box of the stove.

The products of combustion from the fire-box A pass over the top of the oven B to the damper L, or its equivalent. If the damper is open, the products of combustion are admitted to the middle flue C, and pass through the opening K, around the water reservoir, to the exit pipe G. When the damper is closed, the draft will pour down the side end flues and under the oven, thence to the vertical middle flue C, and so through the opening K, to the exit flue G, as before. Thus the water in the reservoir will be heated as well when there is a direct draft as when the same is conducted around and under the oven, and will be heated much more readily by the admission of the heat to all portions of the outside of the water reservoir. The use of the extension top is so obvious as to need no explanation.

Fig. 10 shows a modification of my said invention, to be used when it is desirable to place the water reservoir above the top of the stove, as fol-

lows: I construct the casing F substantially as above described, but above the top of the stove, and with an opening from the flue above the oven, at L, and another opening from the middle vertical flue C, as at L′, Fig. 5. The damper is so constructed that in one position it closes the opening at L, and in another position it closes the opening at L′. When it is wished to conduct a direct draft through the casing F, the damper is placed in a horizontal position, which closes the middle vertical flue C, and permits the products of combustion to go directly into the casing F. When the damper is turned into a vertical position, it closes the opening from
450 the flue above the oven, and turns the draft down the side flues, to return through the middle vertical flue, and enter the casing around the reservoir at L.

In Fig. 1 is shown a reservoir arranged, so far as regards the flues, in a manner similar to that above described, the back plate of the stove having two apertures, K and K¹, for the admission of heated air and products of combustion into the chamber in which the reservoir is placed. The water reservoir E is shown as being placed close against the back vertical plate P of the stove. The same general plan is shown in Fig. 2, the reservoir having been removed.

In Fig. 3 the water reservoir is shown as placed within the chamber F in a manner similar to that just above mentioned, except that in this case the pipe-collar of the exit pipe is placed forward of the reservoir in the casing or directly over the back flue of the stove, as at H¹. By raising or lowering the damper L, the heated air and products of combustion are carried into the chamber F or escape through the exit pipe H¹, or are turned down through the descending flues shown at H², Fig. 6, and return in the usual manner. When the exit pipe is placed in front of the reservoir, the back edge of the top of the plate of the stove follows the course of the dotted lines on Fig. 4.

In Fig. 5 is shown a reservoir having a chamber, F, either surrounding the reservoir E in whole or in part, the back plate of the stove P, having an aperture, K, extending from the bottom of the chamber F upward to the under side of the top plate of the stove H (the said opening may be of any desired breadth or height), the damper L regulating the currents of heated air, as described above.

In Fig. 7 is shown the back vertical plate of the stove, represented as having openings or apertures, K and K¹, and by dotted lines. These apertures may, as shown, be extended the whole width of the stove, or cut off before reaching the extreme width, as the manufacturer may deem best.

I do not confine my invention to a cooking stove with an extended top over a reservoir, inasmuch as the heated air and products of combustion may pass through the opening K, Fig. 3, and be conducted into a chamber, F¹, outside of and beyond the back vertical plate of the stove, as shown in said figure. A rim or flange is formed around the upper edge of the reservoir, so as to reach over and cover the chamber F¹, and
451 rest upon the walls F surrounding said chamber, the reservoir having a cover of any desired form. The cover may be on a horizontal line with the top plate of the stove, or below the same.

Another arrangement is shown in Fig. 9. In this case a flue or chamber, F², is extended backward from the back plate of the stove, and said back plate P having an aperture of suitable size, K², through which the heated air and products of combustion are carried under the reservoir, the bottom of the reservoir forming the top of this horizontally extended flue or chamber; and back of the reservoir this flue or chamber is continued vertically to the top line of the reservoir, and thence through the exit pipe the products of combustion escape. The back wall of the reservoir forms the front of this flue or chamber F^3, and the width or depth of this flue, as well as that of the flue F^2, may vary to suit the convenience of the manufacturer. Fig. 10 is to show that the back damper C^3, which is a sliding damper, having apertures to be opened or partially opened to regulate the amount of heated air to be conducted in the chamber F, situated above plate H of the stove. The damper C^3, instead of extending the whole width of the stove, may be extended only to cut off the middle flue, when the products of combustion will be carried into the chamber F^1, by means of the side flue H^2, Fig. 6, to the exit pipe G, Fig. 10.

In Fig. 12, as well as in Fig. 10, is shown a check damper or regulator, C^2, to reduce the excess of heat should it become too great, and to make more uniform the temperature of the water in the reservoir E, or air in the oven B. The damper C^2 may be constructed so as to revolve, as shown by diagram, or slide, as shown by dotted lines.

In Fig. 13 the reservoir E is shown separate from the stove. Flanges, E^2, are formed on the walls of this reservoir, which may be cast with the reservoir, and, by being of varying thickness and matching in suitable grooves in the chamber, may assist in supporting the reservoir E within the chamber F^1. At E^1 are shown small apertures or perforations through the walls of the water reservoir for the purpose of allowing the steam to escape when the reservoir lid is closed.

In Fig. 14 is shown a modification by which my invention may be
adapted, viz, by bending or constructing the back vertical plate P
452 so that it may form a part of the casing F which surrounds and
forms the chamber in which the water reservoir is placed.

The arrows on the respective drawings are intended to represent the currents or direction of the passage of heated air or products of combustion.

Having thus described the nature and operation of my said invention and improvement, what I claim as my invention, and desire to secure by letters patent, is:

1. The employment of the casing F surrounding the reservoir E, when the reservoir is placed in the top of the stove and in the rear and at the back thereof, substantially as described and set forth.

2. The said casing F surrounding the reservoir E, when the same is placed above the top of the stove, substantially as described and set forth.

3. Conducting the heat and products of combustion from a cooking stove around the bottom and sides of a reservoir, E, placed at the back of the stove and in the top thereof, in such a manner that the same will circulate freely upon all sides of the said reservoir, substantially as described and set forth.

4. Conducting the heat and products of combustion from a cooking stove around the bottom and sides of a reservoir, E, placed entirely above the top of the stove, in such a manner that the same will circulate freely upon all sides of the said reservoir, substantially as described and set forth.

5. Placing the exit pipe of a three-flue cooking stove in the casing F

surrounding a reservoir, E, so that the same may be heated by a direct draft, in a manner as substantially described and set forth.

6. The removal or its equivalent of the part of the back or vertical plate of a cooking stove, thereby forming the apertures K and K^1, to admit heated air, smoke, and the products of combustion from the rear or vertical flue or flues against a water reservoir in the rear or back of the stove, and set in the top plate of said stove, substantially as described and set forth.

7. The arrangement and location of a water reservoir or culinary boiler with regard to the back or vertical flues or flue of a cooking stove, when said reservoir is situated in the rear of and wholly below the top extended plate adjoining the flues, and suspended by a rim or flange to or in said extended plate, substantially as described and set forth.

(Here follows diagram marked page 453.)

454, 455 8. The bending of the rear or vertical plate P of a cooking stove above the bottom-oven plate, for the purpose of making a hot-air chamber or its equivalent on one or all sides of a water reservoir, substantially as described and set forth.

9. The location, construction, and use of the check damper C^2 or its equivalent in the rear vertical casing of the hot-air chamber containing a water reservoir, whether each chamber is below or above the top plate of the stove, substantially as described and set forth.

10. A diving-flue cooking stove, with the exit flue constructed across the bottom and up the rear upright side of the tank, reservoir, or other culinary vessel, substantially as described and set forth.

RICHARD M. HERMANCE.

Witnesses:
M. J. MANNING.
J. ALBERT CIPPERLY.

456 DEFENDANT'S EXHIBIT No. 9.

UNITED STATES PATENT OFFICE.

Joel Tiffany, of Albany, New York. Improvement in combined water tank and warming closet. Specification forming part of letters patent No. 93771, dated August 17th, 1869.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, Joel Tiffany, of the city and county of Albany and State of New York, have invented a new and useful improvement in combining water tanks and heating closets with stoves, both heating and cooking; and I hereby declare that the *the* following is a full and exact description of the same, reference being had to the annexed drawings, and to the letters of reference marked thereon, forming a part of this specification.

My invention has for its object such a construction and combination of water tank and warming closet with stoves, both for cooking and heating purposes, as to be able to use the products of combustion and heated air, after they have left the stove, for the purpose of heating water, and warming or keeping warm whatever may have been put in the closet for such purpose.

In the accompanying drawings—

Figure 1 represents the skeleton outlines of a stove, and of the tank and closet, &c., the tank being surrounded by a dead-air space, attached and combined with the stove.

Figure 2 represents the stove, tank, and closet complete, except as to the lids of the tank.

457 Figure 3 represents a vertical sectional view of the tank and closet, showing the direction of the currents of heated air, gas, and other escaping products of combustion, before and after leaving the stove, and while circulating along and between the warming closet and water tank, and then onward and outward.

Figure 4 is a representation of a horizontal sectional view of the stove and closet near the base or bottom of each.

The warming closet and tank are separated from each other by a chamber for the heated products of combustion, connecting with a pipe passing through the warming closet, and conveying thence the escaping products of combustion after they have left the stove, from the stove to such chamber; and said chamber is connected outwardly by a pipe or flue passing thence to a pipe leading to the chimney.

The warming closet B is heated by means of the pipe *f*, connecting the discharge flue of the stove with the chamber *a a* as seen in Fig. 3, and also by means of the chamber *a a* covering the entire top of the closet.

The water tank is heated by means of the hot air and gases discharged into the chamber *a a* between the closet and the tank.

By the above arrangement, the combination of the water tank and warming closet, they can be attached to any class of stoves, if desirable. They can be so connected with the exit pipe of a stove, furnace, or fire-place even as to conduct the escaping products of combustion around and through them, so as to economize and utilize the heat, which would otherwise pass off into the chimney and be lost.

The tank or closet being constructed separately or together independent of the stove, they are capable of being detached therefrom, leaving the stove completely without their attachment, and leaving them complete without being attached to the stove.

The tank and closet may be attached to the stove in many ways. A very simple way, where they are attached to the back of the stove, as represented in the accompanying drawings, is by means of lugs or hooks, either cast in the back of the *back of the* stove, with a corresponding eye in the side of the case surrounding the tank, or in the top and side of the closet, or the attaching hook and eye may be reversed.

458 The bottom of the closet, upon which the tank is situated, may be provided with feet, as represented in Fig. 2, or it may stand directly upon the floor, or it may be supported by a projection of the bottom of the stove for such purpose, or in any other equivalent manner.

Having thus fully described my said invention, and the manner of applying the same, I will proceed to set forth my claims as to what I desire to secure by letters patent:

1. I claim a water tank and warming closet, with a jacket surrounding the former, in combination with the chamber between tank and closet, constructed so as to be attached to or detached from the outside of a stove or furnace, substantially as described.

2. I claim the water tank A, the warming closet B, space C, and flues *f a f*, when constructed as and for the purpose described.

JOEL TIFFANY.

Witnesses:
JNO. A. BAKER.
ISAAC FONDEY.

(Here follows diagram marked page 459.)

460, 461 DEFENDANT'S EXHIBIT No. 10.

UNITED STATES PATENT OFFICE.

Daniel E. Paris, of Troy, New York. Improvement in cooking stoves. Specification forming part of letters patent No 113556, dated April 11th, 1871.

To all whom it may concern:

Be it known that I, Daniel E. Paris, of the city of Troy, in the county of Rensselaer and State of New York, have invented new and useful improvements in cooking stoves; and I do hereby declare that the following is a clear and accurate description of the same, reference being had to the accompanying drawing, and to the letters of reference thereon, like letters representing like parts, in which—

Figure 1 is a perspective outside view of my stove, showing the double reservoir I I and the hot-closet below, and also the mica windows O O, &c. Fig. 2 gives the same general view of the stove with the oven door open, the mica windows removed, the reservoir-covers U U turned up, and one of the front ash-box doors open and the other removed from the stove. Fig. 3 is a front view with the ash-box doors Z Z thrown open, showing the coal pan A and the ash pan B, and their positions one above the other. Fig. 4 is a view in perspective of the front fire-plate W. (Seen again at W, in Fig. 7.)

This plate is shown attached to the movable hearth-slide *p'* (seen again at *p* in Fig. 1), but it is not necessary to attach it to said plate. Its use is simply to form a front wall to the fire-box, in order to protect the mica from contact with the fuel in the fire-box. The upper part of the plate is made with open bars, so as to allow the light to reflect through the mica window O O. The lower part of this plate is made close, but it may be made open if desired, provided a bar or its equivalent is formed 462 across the plate, which shall connect with the hearth or hearth-slide so as to prevent the air that reaches the fire as draft from passing up over the fire in front of said plate, which, if allowed, would injure the draft, and for this reason the hearth-plate *p* should come up to the plate W and make close connection with it, or, what is equivalent, the hearth-plate *p* may come up near to the plate W, and then the opening left may be closed in some other way, such as, for instance, attaching a foot-piece or cap to the mica door, as seen in Fig 5 at Q Q.

These pieces Q Q may be one or more, and attached to the mica door or windows O O, so that when the mica door is in its place, as in Fig. 1, the openings q' q' (seen in Fig. 6) will be covered, and thus in effect be the same as though the plate P actually made a close connection with the front fire-plate W.

The object of making this covered opening is that, as coals and ashes accumulate on the hearth P, having passed through the bars or over the plate W, they may be easily disposed of by sweeping or brushing them through the openings q' q', falling into the sifting-pan below.

It will be seen that I locate the hearth above fire-grate and about two-thirds of the way down the fire-box from the stove top to the grate. This location of the hearth is important, as it gives room enough above for perfect illumination, &c., and allows room enough below the large coal-pan A and the large ash-pan B.

Fig. 7 is a sectional side view of the front part of the stove, showing the fire-box C, the coal-pan A, the ash-pan B, the front doors to the ash-chamber and their draft-openings, and also the hearth-plate P and the mica door or doors, which may be stationary or movable, or hung on hinges, so as to open or shut as desired.

It will be seen by the perspective view, Figs. 1 and 5, that this mica door or mica window consist of or are upright illuminating lights formed on a sloping surface, which surface connects the stove top with the hearth P. In fact the hearth P, as well as said sloping part, is merely a continuation of the top plate itself, which, when it reaches the front of the fire-box, is depressed downward to the front at such an obtuse angle as may be desired, and then forward horizontally, forming the hearth-plate P, which latter may be all in one piece, or in two or more pieces, as desired. This sloping surface, together with the upright mica windows, not only gives beauty and gracefulness to the stove front, but it is useful in gaining the spaces at q' q' in front of the plate W and in rear of the mica 463 windows; also in giving room to the plate W to lean forward so as to graduate the capacity of the fire-box, and it is essential that the stove top project as little forward as possible in front of the plate W, because if it projected far forward it would interfere with the feeding the fire with coal over the plate W when the boiler-holes are occupied on top. It would also be more inconvenient to broil over the fire, which is done by a gridiron inserted through the opening formed above the plate W. Thus it is seen that the stove top should project as little as possible in front of the plate W, and it is also seen that it is very desirable to have plenty of space in rear of the mica door at its base. Thus I claim particular attention to the importance of this sloping surface connecting the hearth with the top, and also to the upright windows on this surface, so made that the mica will not blacken because of their greater distance from the fire.

The fire-grate W', Fig. 8, lies loosely on the upright rocker-pieces x x, which rest on journals at a point some distance below, at x' x', and these rocker-pieces are vibrated by the shaker T, inserted into the side of one of them, as seen in Fig. 8, or the grate may be vibrated in the usual way; but this is preferred. The coal-pan A rests upon these same rocker-pieces at a point below the grate, and is made to draw out and push in like a drawer, resting on projecting flanges cast on said rocker-pieces.

Thus it will be seen that the fire-grate and the coal-pan are both moved or vibrated by the shaker T, so that I sift or screen the coals from the ashes at the same time that I shake the grate. The chamber in which these two pans are located forms also a large heating chamber or hot-air draft, which gives more perfect combustion and is a saving of fuel.

The coal-pan A is made with openings at the bottom to let the ashes through into the ash-pan B, and these openings are not so large as to let the coal through.

The pans A and B are independent of each other, and the fire-grate independent of both, and the grate is made to turn on its journals, so as to dump and clear itself of the coals; and it will be seen that the journals of the rocker-pieces *x x* are so far from the intense heat of the fire-box that they are not affected by it. These rocker-pieces form also conductors or chutes for the ashes to the ash-pan at each end of the same.

The roasting-rack S, Fig. 2, is made so that it will let down horizontally or turn up perpendicularly, and so that when turned up
464 the oven-door may shut over it, and when let down horizontally
pans containing articles baking or roasting, especially the dripping-pan, may be drawn out into it, so that the intense heat of the oven may be avoided, and so that such work as basting meat, for instance, may be done outside of the oven.

The rack is supported by the combination of the side or jamb of the stove with the oven bottom, which unite at their point of contact to form sockets or slots for one, two, or more projecting arms of said rack. This rack is movable, so that when not in use it can be laid away; and the oven-door may be made to shut over the open sockets or slots formed for its reception. This rack may be attached simply to the sides of the stove or to the oven-bottom only, if so desired.

The oven is ventilated and the fire-box supplied with heated air by means of the openings *d'* on either side of the stove, Figs. 1 and 2, which admit cool air into the passage *d*, Fig. 7, which latter is connected with the passage N, Fig. 7, the passage N being an opening through the long center or top plate and its lining and support, and the two passages are connected with the oven by small openings down into the oven, and also into the fire-box, as seen by the arrows at *d* and N in Fig. 7.

The pancake-griddle R, Fig. 9, has a journal cast on the under side at *n'*, which fits into the opening *n*, Fig. 1, and this said griddle may be thrown over any boiler-hole of the stove. As the opening N is equidistant from all four boiler-holes, by this means a cake-griddle may be thrown over any of the boiler-holes, and thus its heat is graduated into any degree desired without lifting it off the stove.

I fasten the doors of the stove, especially the oven-doors, with an improved catch or handle. (Seen in Figs. 1 and 10.) Its novelty consists in the crooked shank 2, combined with the wood attachment 3, the parts 4, 5 and 6 not being new. The object of this crooked shank 2 is to bring the wood handle 3, Fig. 1, down near the surface of the door, so as not to be in the way, and so as to give a greater purchase in tightening the catch.

I have added a second sheet to the drawing, giving more in detail some of the parts, especially the arrangement of flues as regards the reservoirs and formation of the reservoir seat or chamber.

Fig. 1, sheet 2, is a vertical section taken through E F of Fig. 3. Fig. 2 is a vertical section taken through C D of Fig. 1. Fig. 3 is
465 a horizontal section taken through A B of Fig. 1. Fig. 4 shows

the bottom of the reservoirs and the eccentric position of the flanges or sinks formed on the bottom. Fig. 5 shows the flue-seat and heating-chamber formed on the back of stove, with the openings *j j* into the same, which are made to correspond with the flanged bottom of the reservoirs or kettles I I. Fig. 6 is the same view as Fig. 5, with the rear plate P removed, showing the movement of heat under the kettles or reservoirs, through the side flues *f f*, into the chamber *h h*, and thence into the central flue *g* on its way to the smoke or exit opening at M. Figs. 7, 8 and 9 are different views of the damper K, which damper controls the movement of heat or smoke through the chamber *h h*, as follows:

When the damper K, which operates only in the central flue G, as seen in Fig. 6, is turned backwards, as in Fig. 1, the heat or products of combustion pass around the oven in the usual way, that is, down the two side flues *f f*, and thence to the front of the oven, and thence up the central flue G to the exit opening M; but when this damper is thrown over to the front, as in Fig. 9, the central flue is closed, thus compelling the heat to enter the chamber *h h*, and thence pass out above the damper K to exit opening M. In the first instance the heat operates directly upon the oven and indirectly upon the reservoirs, while in the second case it operates directly and powerfully upon the reservoirs, causing them to heat quickly.

These flues may be two instead of three, if desired; but in either case the principle is the same.

The movement of the heat or the products of combustion into the chamber H on its way to the exit pipe is shown by the arrows in Fig. 3.

It may be observed that no particular position on the stove back is necessary for the flue chamber, or therefor for the reservoirs. Nor is it essential that they be in two parts. Thus the chamber H may be near the bottom or near the top of the stove, or part way between, as desired; and the rear plate P may intervene between the chamber H and the bottom of the reservoirs; or it may, and often best, be entirely omitted, as in my application for patent filed January 20, 1869.

The difference between this and the construction there shown consists, first, in the damper K, which here revolves, and, second, in the 466 reservoirs, which are made here movable; and they may be made in one part instead of in two, as was there shown, and the rear plate P removed; and the outer walls of the chamber *h* may be extended upward so as to form a connection with the reservoir on its bottom, or part way up its sides, as desired, and the reservoir still be made movable, so as to be taken off and cleaned, or used for other purposes.

It will be observed that the front side of the reservoir comes in parallel contact with the upper part of rear casing of the back flues, so as to receive their radiating heat.

The openings *j j* are shown round, but they may be square, or oval, or any other desired shape.

Having thus described my invention, I claim—

1. The upright, open-barred plate W, in combination with the upright mica door or window O O, or any equivalent therefor, constructed substantially as herein described and set forth.

2. The rocker-pieces *x x*, or any equivalent therefor, when made to support a coal-grate or coal-pan, one or both, for the purpose or substantially in the manner herein shown and described.

3. The coal-pan A and the ash-pan B, the former above the latter and each independent of the other, in combination with the fire-grate above and the door-openings in front of the same, when made for the purpose or substantially in the manner herein described and set forth.

4. The opening or openings Q′ Q′, formed between the hearth-plate P and the front fire-plate W, in combination with the pieces Q Q formed on the mica door O O, or any equivalent for the same, when made for the purpose or substantially in the manner herein described and specified.

5. The movable rack S, or its equivalent, made for the purpose, and attached to the stove, substantially in the manner herein shown and described.

6. The mode of ventilating the oven and fire-box by means of the air passages *d* and N, when connected and combined with each other, substantially in the manner herein set forth and described.

7. The construction of a stove-door knob, or catch, made with the crooked shank 2, in combination with the wood attachment 3, when made for the purpose and substantially in the manner herein shown and described.

8. The revolving cake-griddle R, in combination with the central opening N in the stove top, or its equivalent.

(Here follow two diagrams, marked pages 467–470.)

471 9. The revolving flue-damper K, in combination with the flues *f f* and *g*, and the heating chamber below the reservoir, made to operate substantially as herein described and shown.

DAN'L E. PARIS.

Witnesses:
MERIT E. PARIS.
WM. D. HERON.

472 DEFENDANT'S EXHIBIT NO. 11.

UNITED STATES PATENT OFFICE.

William L. McDowell, of Philadelphia, Pennsylvania. Improvement in cooking stoves. Specification forming part of letters patent No. 114838, dated May 16, 1871.

The schedule referred to in these letters patent, and making part of the same.

I, William L. McDowell, of the city of Philadelphia, in the State of Pennsylvania, have invented certain improvements in the attachment of boiling vessels to stoves, for which the following is a specification:

NATURE AND OBJECTS OF THE INVENTION.

My invention relates to those removable boiling vessels which communicate with the fire-chambers of cooking stoves by tubes extending therefrom into and around the fire-chambers through holes made for the purpose in the side plates; and

My invention consists of a flat, wide, rectangular chamber communicating with the interior of a boiling vessel and forming part of the same, so as to project horizontally from the one side into the fire-chamber through a corresponding rectangular opening in the plate and fire-lining, which together form the side wall of the fire-box, the said boiling vessel being supported safely upon a removable oven, having an open side, which will, when applied, fit closely against the said side plate of the fire-chamber, and thus be accurately closed thereby, and the oven heated by direct radiation from the said plate.

DESCRIPTION OF THE ACCOMPANYING DRAWING.

Figure 1 is a vertical central section, above the dotted line *x x* of Fig. 2, of a cooking stove with my improvements attached thereto.

473 Figure 2 is a plan view of the upper side or top plate of the stove and of the boiling vessel, connected together in the same manner as is represented in Fig. 1.

GENERAL DESCRIPTION.

The stove A is of the usual flat-top form of a cooking stove, having the usual baking-oven a' in one side and the fire-box a'' and ash-pit a''' on the opposite side.

The boiling vessel B is in the form of a wash-boiler, but has a hollow intercommunicating flat chamber, b', which, forming a fixed part of the said vessel, projects horizontally from one side, and with its bottom in the same horizontal plane with the bottom of the vessel, and is made to enter easily through a corresponding opening in the side plate a^4, and through the lining, if any be used, in the fire-box a'' of the stove, so as to expose its entering end directly to the action of the products of the combustion of the fuel within the said fire-box, when the said boiling vessel B is securely supported for the purpose at a suitable height in relation to the same.

The removable cover b'' consists of two flat plates of cast-iron, articulated together so as to form a cover in two connected halves, each half being provided with bottom flanges, which will cause it to fit accurately around the mouth of the boiler B, and at the same time allow of an easy removal of both together, or of the turning upward of either upon the other, as access to the interior of the boiler may require.

The plate a^4 may be cast thick enough as to render the application of the fire-brick lining unnecessary, and at the same time to afford increased heating effect upon the attached cover *b*.

The oven C is made entirely open at one side, and is supported upon suitable legs or feet, with its said open side closed by contact with the side plate a^4, which latter has suitable narrow flanges 5, cast upon it so that they may enter the open side of the said oven, and fitting closely against the sides of the oven-plates thereat, thus producing sufficiently close joints between the said oven-chamber and the plate a^4 of the stove, while the top plate of the said oven C receives directly upon it the bottom of the boiling vessel B, and thus support the latter at the proper height to suit the adjustable connection of its projecting chamber b' with the fire-box a''.

The front of the removable oven C is intended to be fitted with a door or doors to give access to the interior, as the occasion may require.

474 I do not desire to claim broadly the arrangement at the side of a cooking stove of a removable oven, supporting a boiler communicating with the interior of the fire-chamber by means of tubes passing through the side or back plates of the stove; but what I desire to secure by letters patent is confined to the following claim:

I claim as my invention—

A removable boiler, B, having a projecting, flat, rectangular chamber, b', made to enter the fire-chamber through the side plate a^4 of the fire-chamber thereof, and the supporting oven C, having one side made open and to fit against the said side plate of the fire-chamber, as and for the purposes hereinbefore set forth and described.

WM. L. McDOWELL.

Witnesses:
W. D. BENNAGE.
F. LEIBRANDT, JR.

(Here follows diagram marked page 475.)

476, 477 DEFENDANT'S EXHIBIT No. 12.

UNITED STATES PATENT OFFICE.

W. N. Moore, of Neenah, Wisconsin. Improvement in cooking stoves. Specification forming part of letters patent No. 96826, dated November 16, 1869.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that I, W. N. Moore, of the village of Neenah, in the county of Winnebago and State of Wisconsin, have invented a new and improved extension-top for cooking stove, and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

The nature of my invention consists in the extension of the top of a cooking stove behind the smoke-pipe or escape-flue, the pan or hot-air chamber and flue of such extension being constructed and arrange relatively to the main body of the stove, and provided with dampers, that the heat may be directed into the extension, either directly from the fire-place, or when the same shall have been first directed, in the usual manner, down beneath the oven; in both cases the smoke passes from the extension-flue to the ordinary escape-flue. The heat may likewise be cut off from the extension, thus allowing, as, for instance, a water-tank, to cool, and to use the stove in the ordinary manner. The top of the extension, as well as the body of the *body of the* stove, are provided, in the ordinary manner, with a movable covering, that will admit of receiving pots, kettle, cooking utensils, or a wash-boiler or water-tank.

478 To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 is a perspective view of a fragment of a stove, with my extension attached, the top plate of the stove being removed.

Figure 2 is a plan of the top of a stove, with the extension, the covering or top plate of the stove being represented by dotted lines.

Figure 3 is a vertical cross section, cutting through the dotted lines z z, Fig. 2, showing the ordinary flues.

Figure 4 is a fragmentary vertical longitudinal section, cutting through the dotted line x x, Fig. 2.

Figure 5 is a horizontal section, cutting through the dotted lines y y in Figs. 3 and 4, showing the ordinary divisions of flues beneath the oven.

Figure 8 is a horizontal side damper seen at h, in Figs. 1, 4, 6, and 7.

Figure 9 is a two-part rolling damper, seen at i i, in Figs. 1, 6, and 7.

Figure 10 is the ordinary damper used for cutting off the direct escape of the heat and smoke and diverting the same beneath the oven, and is seen at o, in Figs. 1, 6, and 7.

A is an ordinary stove with my extension-top attached, and seen at B.

c is the ordinary main flue and hot-air chamber.

d is my extension-flue and hot-air chamber.

e e, Figs. 3, 6, and 7, are vertical descending flues, connecting with horizontal flues e' e', Fig. 5, and with return-flue f', and ascending flues f and g, Fig. 4.

h is a slide-damper, adjusted by the handle h'.

i i is a two-part rolling damper, adjusted by the handle i^2.

o is a single-plate rolling-damper, adjusted by the handle o'.

k is the ordinary escape-flue or smoke-pipe.

The arrows seen in the several diagrams show the currents of the hot air and smoke, according to adjustment.

To use the stove in the ordinary manner, without the hot air entering to the extension, the damper o is adjusted horizontally; the damper i i is adjusted vertically, and the damper h is drawn out, all as seen in Fig. 6, thus allowing the hot air and smoke to escape in the ordinary manner, directly from the main flue c to the escape or smoke flue k, and allowing the option of heating the main part of the stove alone.

(Here follow 2 diagrams marked pages 479–482.)

483 To give direction to the hot air from the main flue c to the hot-air chamber d, in the extension, and thus cause both the main part and the extension to be heated, adjust the dampers i i, o, and h, as shown in Fig. 1, and the hot air will pass into the chamber d, and from thence to the escape or smoke-flue k.

To give direction to the hot air from the main flue c beneath the oven, and from thence to the extension, adjust, as seen in Fig. 7, the single damper o vertically, the two-part damper i i vertically, and the slide-damper h, to cut off the direct current from the return-flue f to the escape-flue k. Thus adjusted, the hot air and smoke will pass, as indicated by the arrows, from the main flue c into the vertical flues e e, thence down and into the horizontal flues e' e', beneath the oven, thence in turn to the return-flue f' and f, thence through the flue g, as seen in Figs. 4 and 7, into the extended chamber d, and from thence into the escape or smoke-flue k.

Thus it is that the several adjustments of the dampers allow the option of directing the heat to the extension direct from the fire-chamber, or after the current of hot air has first passed beneath and heated the oven, and then to the extension; or the currents of hot air may be cut off entirely from the extension.

It is apparent that my extension-top may also be applied to stoves containing a different combination of flues, for heating an oven, than those herein set forth.

What I claim as my invention, and desire to secure by letters patent, is—

1. The extension-top B, attached behind the escape-flue k, and providing the same with a hot-air chamber, d, flue g, dampers h and i i, when attached to a cooking stove for the purposes set forth.

2. The extension-top B, hot air chamber d, flue g, dampers h and i i, when arranged relatively to the stove A, provided with damper o, flues e e e' e' f' and f, or other accessories of a similar or equivalent character, as and for the purposes set forth.

W. N. MOORE.

Witnesses:
L. W. HALVEY.
W. G. RITCH.

484 DEFENDANT'S EXHIBIT NO. 13.

UNITED STATES PATENT OFFICE.

James R. Hyde, of Troy, New York, assignor to Chas. Eddy & Co., of same place. Improvement in stoves. Specification forming part of letters patent No. 35564, dated June 10, 1862.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that I, James R. Hyde, of the city of Troy, county of Rensselaer, and State of New York, have invented a new and useful improvement in adjusting boiler to stoves, and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings and to letters of reference marked thereon.

Like letters represent like parts.

Fig. 1 is a perspective view, showing the stove with boiler attached, in the manner hereinafter described and set forth.

Fig. 2 is a perspective of the stove, showing the back thereof and the respective parts thereto attached, by which the boiler is attached to the back of the stove.

Fig. 3 is a perspective view of the boiler, showing the construction of the same.

Fig. 4 shows the combination of parts, hereinafter described and set forth, by which the boiler is adjusted to the stove. It also shows the manner in which the adjustment is made.

The nature of my invention consists in adjusting boilers to the back or sides of stoves, by means of projections from the same at or near the upper
part thereof, so that a pin or part projecting from the sides of the
485 boiler shall fall into the top of the bracket projecting out from the
sides of the stove, whereby the boiler is pressed against the back or
side of the stove, when the same may be adjusted by means of the weight
of water contained in the boiler.

To enable others skilled in the art to which my invention relates to make, construct, and use the same I will here proceed to describe the construction thereof, which is as follows, to wit: I construct upon the back or side piece, when I wish the boiler adjusted at or near the top of the same, a bracket, shown at *b*, Figs. 1, 2, and 4. This bracket projects outward from the stove to any required distance, and is cast upon and with the stove plate. It has a notch or recess, *a*, same Figs., in the top thereof of sufficient depth to receive a pin or bracket projecting outward from the side of the boiler, by means of which the said boiler is connected and firmly held to the stove, which bracket is seen at *c*, Figs. 3 and 4, also at Fig. 1. This pin or bracket may be a rod of iron passing entirely across the boiler upon the inside thereof, and projecting through each side far enough to connect with the said bracket *b* upon the stove, and hereinafter described. It may also be cast with the top part of the boiler-plate, which is of cast iron, by projecting downward from the under side *side*, and then outward through the respective sides of the said boiler, which is made of tin and copper, or other material, *is* desired. It may also be constructed with the bracket *b*, Fig. 4, and adjusted to the stove by means of a bolt, seen at *d*, same Fig., which shall extend through said bracket, also through the side of the boiler, and upon the inside thereof have a nut and screw. The back of the stove *c*, Figs. 1, 2, and 4, is somewhat curved. The side F of the boiler D is also curved, so as to correspond to and with the back of the stove, so that by means of the weight of the water in the said boiler pressing downward, in obedience to a natural law, that part of the said boiler shall be pressed against a corresponding part of the stove, whereby the said water in said boiler is heated. Boiler' thus adjusted to stoves are more convenient and durable than has heretofore be' accomplished. The advantages gained thereby suggest themselves to the mind of the party concerned with description here.

Having thus described my invention, what I claim, and desire to secure by letters patent, is—

The suspending of the said boiler D at the upper corners thereof next
adjoining the stove by means of the brackets *b b* in combination
486 with the brackets *c c*, projecting from the said boiler D into the
recess *a* of brackets *b b*, so that by the weight of the water in the
said boiler it will be brought into close conjunction to and with the stove thus connected with said boiler, substantially as herein described and set forth.

In testimony whereof I have hereto set my hand.

JAMES R. HYDE.

Witnesses:
Marcus P. Norton.
Wm. L. Warren.

(Here follows diagram marked page 487.)

488, 489

DEFENDANTS' EXHIBIT No. 14.

UNITED STATES PATENT OFFICE.

James R. Hyde, of Troy, New York. Improvement in stoves. Specification forming part of letters patent, No. 37966, dated March 24th, 1863.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern :

Be it known that I, James R. Hyde, of the city of Troy, in the county of Rensselaer and State of New York, have invented a certain new and useful improvement in such stoves as have a boiler suspended with one side against the upright rear end of the stove, of which invention the following is a full and exact description, reference being had to the annexed drawings, in which Fig. 1 is a perspective view of a stove embodying my invention, and Figs. 2 and 3 are perspective views of the same stove and its boiler separated, while the same letters refer to like parts in all the figures.

Stoves have been heretofore made with a removable boiler, A, suspended against the upright back plate B of the stove by means of fastenings so arranged on the side of the boiler next adjoining the stove, that the weight of the water in the boiler would press the latter, or rather the lower and greater portion thereof close against the upright back plate of the stove, and thereby promote the heating of the water in the boiler; examples of such stoves being shown in my application for a patent filed in the United States Patent Office in the year 1858, and in United States letters patent No. 35564, granted to Charles Eddy & Co., as my assigns. But in such stoves the boiler was attached or hung to the upright part of the stove, so that the weight of the boiler and water therein tended to tilt over
490 or pull out from the stove the upright plate or plates thereof, to
which the boiler was suspended; and in such stoves the boiler was hung on catches or brackets formed on and projecting out horizontally from the upright part of the stove in places where they served no useful or ornamental purpose but to hold the boiler, and where they were more or less in the way when the boiler was removed from the stove; and those projecting catches or brackets were quite difficult to cast perfectly on the upright part of the stove, and were liable to get broken off in the transportation and use of the latter; and the points where the boiler was suspended were somewhat below the top of the boiler, so that it was difficult to make the upper part of the boiler hang tight against the back plate B of the stove, for the tendency of the weight of the boiler and water therein was to pull away from the stove all that part of the boiler which was above its points of suspension.

Now, in order to avoid the above-mentioned defects, and also secure the advantages hereinafter specified, I hang the boiler A with one upright side thereof against the upright back plate B of the stove from the ordinary projecting part *c* of the horizontal top plate D of the stove by means of hangers, *e e*, rigidly secured to the boiler and extended above the top *f* thereof on the side next adjoining the stove to and into suitable holding sockets recesses, *g g*, in or through the projecting part of the said top plate.

By thus having the places *g g* where the boiler is loosely hung above the top *f* of the boiler the weight of the boiler and water therein will press the uppermost part of the upright side of the boiler as well as the lower and main portion thereof hard against the adjacent upright back plate B of the stove; and by thus hanging the boiler to the top plate D of the stove the weight of the boiler and water therein will pull the said top plate firmly down on the top edges of the back and side plates B H of the stove, and will also press the back plate B firmly against the rear end of the side plate H, and thus tend to hold the parts of the stove together when the latter is composed of separable plates united together in the common manner. And by thus suspending the boiler A from the ordinarily projecting plate *c*, of the top plate D, I not only avoid adding any projecting parts or brackets to the upright part of the stove, but do not require the top plate D to project any farther outside of the back plate B than it generally does in the stoves in common use with no boiler at the rear end thereof; and the recesses or openings at *g g* may be easily cast in the top plate D, and the boiler A may be readily taken from and rehung upon the stove.

(Here follows diagram marked page 491.)

492, 493 I do not claim as new a stove having a removable boiler fitted sideways to and suspended against the upright back plate of the stove, so that the weight of the boiler and water therein will press the boiler or the lower and greater portion of the upright side thereof close against the said upright back plate of the stove, such a stove being shown in my aforesaid application and patent, but with the boiler hung at points somewhat below the top *f* of the boiler and on the upright part of the stove.

What I claim as new and of my invention, and desire to secure by letters patent, is a stove having a boiler, A, suspended with one upright side against the upright rear end B of the stove, by means of hangers, *e e*, extended up rigidly from the boiler, and loosely engaged with the ordinarily projecting part *c* of the top plate D of the stove, at plates *g g*, above the top *f* of the boiler, and over the side or portion thereof nearest to the stove, substantially as and for the purpose herein described and set forth.

JAMES R. HYDE.

Witnesses:
JAMES FROST.
H. E. PAINE.

494 DEFENDANTS' EXHIBIT No. 15.

UNITED STATES PATENT OFFICE.

Caleb Slade, of Troy, New York. Improvement in stoves, grates, boilers, and ovens. Specification forming part of letters patent No. 457, dated November 11, 1837.

The schedule referred to in these letters patent and making part of the same.

To all whom it may concern:

Be it known that I, Caleb Slade, of the city of Troy, in the county o

Rensselaer and State of New York, have invented new and useful improvements in stoves for burning coal, and also in ovens and in boilers, and I do hereby declare that the following is a full and exact description:

I have applied my improvements to stoves made square at the base, having upright sides of equal width and about twice as high as they are wide, with a common sunk hearth and sliding damper, and a grate constructed and arranged like those in common use with other coal stoves.

The seat of the grate consists of a horizontal plate extending to the side, back, and front plates of the stove, with an opening of the form and size of the grate in the centre. From the under side of this plate a flange is extended down vertically about four inches to the bottom plate or hearth, and horizontally it is extended round near the edge of that part of the sink which comes within the stove, terminating vertically in front on each side even with the forward edge of the plate to which it belongs. This plate and flange are represented in the annexed drawing in Fig. I, letters *a b b*, and separately from the stove by Fig. II. By means of the forward termination of the flange it is made to set snugly against the front plate.

The back or inner end of the sink, as well as the cross-section of
495 the flange behind it, as shown in Figs. I and III, is forward of
the back plate of the stove far enough to leave room between the plate and flange for an opening through the bottom plate, as at *c*, Fig. III, as an inlet for air into the space thus left between the flange and outer plates of the stove to be improved as an air chamber. This space is partially shown in Fig. I, letters *d d*. Upon the horizontal plate thus supported by the flange the furnace *e* for burning the coal is placed, the opening in the plate with the grate being covered by it. I make the furnace of cast iron, and connect it at the top with an horizontal plate which is cast with it, so as to extend like the plate below to the side, back, and front plates of the stove, as shown by Fig. VI and letters *f f*, Fig. I. The space *g g* which surrounds the furnace between these two plates forms another or second air chamber, between which and the chamber that surrounds the flange underneath communications are made by openings in the lower plate of the two near the front, as at *h h;* an opening is also provided in each side plate, as at *i*, Figs. VI, VII, and VIII, and in the back plate as seen at *seen at f*, Fig. VIII. These openings are near the top of the upper air chamber, and are for the purpose of allowing the air as it becomes heated to escape into the apartment in which the stove is placed, or otherwise applied, as will hereinafter be explained.

I make provision for a boiler on each side of the stove, and for their support I attach a plate to each side plate, extending out horizontally about on a level with the top of the furnace to a distance about equal to twice the diameter of the boiler. These, for the purpose of description, will be called the platforms. In order to present the boiler to the fire an opening is provided in each side plate of the stove for that purpose, the bottom of the opening on a level with the platform, and the boiler I make with a projection of a part of the vessel itself, extending out horizontally on one side to such distance as that when shoved into the opening it will reach over about a third part of the furnace. Its dimensions otherwise are in width about equal to half the diameter of the other part of the

boiler, and from the same bottom extending up to about three-fourths of its height. The size and form of the openings and of the projecting part of the boiler are adapted to each other. The platforms, with the boilers in place over the furnace, are represented in Fig. I, and the boiler sepa-
rately on a reduced scale by Fig. V, and the side openings on an en-
496 larged scale by Fig. VI, letter *j*. In each platform a sink is provided
occupying a space horizontally a little less than the bottom of the
external part of the boiler when its projection is placed over the furnace. The depth of the sink at the sides is about an inch, but in the centre of the inner edge of the plate it is extended down so as to enclose within its limits the opening (*i*) in the side plate from the upper air chamber, in order that the heated air therefrom may be let into the cavity formed by the sink under the boiler, and thereby assist in heating it. The sink, with its depressed section at the centre, is shown in Fig. VI, *k l*. The platforms are attached to the stove by means of a projection from the side plates near each edge, with a recess in nature of a socket extending up to a discretionary distance next to the surface of the side plate, and by providing a corresponding lip or flange from the end of the platform for each socket it is placed therein, and thereby held secure against outward inclination. This is seen at *m m*, and a flange from the side plate as at *n*, Figs VI and VIII, fitted to the edge of the depressed section of the sink, so as to allow it to rest thereupon, whilst the same section in its bearing against the side plate answers the purpose of a brace—by all which the platform is effectually supported in its place—and by raising its outer end is easily disengaged and taken off, so as to leave the stove to be used without them when desirable; when either of the boilers are not used the opening for it is closed by a movable plate or door.

The opening for the stove-pipe is in the top plate, back of the upright part of the back plate, they both being projected out for that purpose, as shown in Figures I and VIII. There is also an opening for a boiler at or near the centre of the same top plate as is seen in Fig. I.

My improvement in ovens consists in making them with double bottom, sides, and top, and in using them in connection with coal stoves of the above description, and also in the manner of heating them, as is hereinafter pointed out.

For the sake of description I distinguish the double plates of which the oven is composed as the inner and outer ovens. They are so apportioned to each other as to leave a space between them for the draft or hot air from the fire to pass therein throughout. In order to provide for its entrance an opening is to be made in the bottom of the outer oven, surrounded with a shallow flange, as a collar fitted in size and form to the
opening for the boilers in the top plate, so that on placing the oven
497 upon the stove the collar will enter the boiler opening and set
squarely within it, thereby closing the common passage from the
fire to the stove-pipe by a damper such as is commonly used for like purposes; the draft or heated air will pass through the boiler opening into the space between the bottom plates of the outer and inner oven, and then up the sides and over the top, from the centre of which a pipe is extended as a continuation of the draft to the common stove-pipe or chimney, as is shown by Fig. VII. In Fig. IX, which is a representation of the oven on one end, in order to show the opening O, with its collar in the bottom

of the out-side, are shown the double bottom, sides, and top, the outer front plate being off.

In order to protect the bottom of the inner oven from being too much heated, I place under it, when the fire requires, such protection, brick or other material, raised above the opening by means of rods of iron placed across it, or attached to the oven, so as not to obstruct the passage.

I also make use of the hot air issuing from the upper air chamber to aid in heating a common reflecting tin oven which is occasionally placed upon the stove (the boiler opening being closed), for the purpose of baking or cooking, by conducting the heated air in the oven by means of a pipe attached to the opening in the back plate, for which purpose a shallow flange is provided round the opening to receive the pipe. This opening when required is closed, and regulated by a damper, provision being made for that purpose, as shown in connection with the opening at *p*, Fig. VIII.

I have a door provided in the front plate of the stove for the introduction of fuel to the furnace. These, with a narrow horizontal opening for agitating the grate, are represented in Fig. VII.

What I claim as my invention, and desire to secure by letters patent, is the manner of constructing the air chamber between the flange which supports the grate and furnace and the external plate of the stove in combination with the air chamber next above it, in the manner and for the purposes described.

The manner of constructing the platforms and of attaching them to the stove, and supporting them in that connection and detaching them from it in combination, also with the air chambers, in the manner and for the purposes described.

The manner of constructing the boilers, with the manner of applying the hot air from the air chamber to aid in heating them, both in 498 combination with each other and with the stove of the above description, and also the double oven, in combination with the same stove, for the uses and purposes described.

Subscribed this 19th day of October, 1837.

CALEB SLADE.

Witnesses:
DANIEL WHITING.
GEO. CROSS.

(Here follows diagram marked page 499.)

500, 501

DEFENDANT'S EXHIBIT NO. 16.

UNITED STATES PATENT OFFICE.

James H. Mitchell and Thomas S. Mitchell, of Pittsburg, Pennsylvania. Cooking stove. Specification forming part of letters patent No. 98086, dated December 21, 1869.

The schedule referred to in these letters patent, and making part of the same.

To all whom it may concern:

Be it known that we, James H. Mitchell and Thomas S. Mitchell, of the city of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful improvement in cooking stoves; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which

Figure 1 is a perspective view of a stove, with a portion of the top plate removed, so as to illustrate our improvement, and

Figure 2 is a cross section through the line *x x*, Fig. 1, the partitions of the diving flues being represented by dotted lines.

Like letters of reference indicate like parts of each.

The nature of our invention consists—

First, in arranging, in an extension stove, two flues for carrying off the smoke and other products of combustion, one at each side, instead of a single flue in the middle of the stove, as heretofore, so as to bring as much of the heat as possible under the rear holes of the extension; and

502 Second, in so arranging the dampers of such side flues that, for the purpose of heating the oven, the products of combustion will be caused to descend to a central diving flue and return by vertical side flues, and thereby be discharged into the smoke or heating chamber of the extension under, or at such point that they must pass under, the side holes of the extension.

To enable others skilled in the art to make and use our improvement we will proceed to describe its construction and mode of operation.

The drawing shows a cooking stove, having a hearth, *a*, grate, *b*, top plate, *c*, side plates, *d*, and oven, *e*, all of the usual or any known construction.

For the purpose of getting a stove of greater capacity, without enlarging the grate or fire space, such stoves have been made with an extension, *f*, in which were made holes, *g*, for cooking or heating purposes.

The diving flues, by which heat is conveyed to the rear, side, and bottom of the oven, are placed vertically in front of such extension.

The heating chamber *h*, in front of such diving flues, has heretofore been connected with the heating chamber *h'* of the extension by a central flue, which was opened and closed by a damper, placed in front of it or on the side next to the chamber *h*. The upper openings of the side diving flues were enclosed on all sides, except the front, by a close partition; then, when the damper of the central flue was open, the smoke and other products of combustion passed through the central flue, from the chamber *h*, to the chamber *h'*, and out at the pipe-hole *f'*, so that a cooking utensil placed in either of the holes *g* would be heated but slowly. If, on the other hand, such damper be closed, the smoke passes down the side diving flues and out at the central flue, with like effect as before.

The object of our invention is to bring the products of combustion under the holes *g*, whether the diving flues be used or not.

For this purpose we enclose the upper end of the central diving flue *m* by a partition, *y*, on its rear and sides, leaving it open in front, into the chamber *h*.

The chambers *h* and *h'* we connect with each other, by flues *y' y'*,
503 passing over the upper ends of the side diving flues *n* and *n*, and
arrange a double or two single dampers, *i* and *i*, on the front side of the upper end of such flues, or on the side next the chamber *h*, which dampers we operate by a damper-rod, *i'*.

Then, when the dampers i are open, the products of combustion pass through the horizontal side flues and enter the chamber h', directly under the holes g, so as there to be most perfectly utilized for heating or cooking purposes; and when, for heating the oven, the dampers i are closed, the smoke, etc., passes down the central diving flue, m, up the vertical side flues n and n, and into the chamber h', under the holes g, with like effect as before described.

In the use of the horizontal side flues connecting the chambers h and h' we do not limit ourselves to the exact arrangement shown, but include a modification which secures the same result when the dampers are open.

In this modification we enclose the upper end of the central flue m on all sides except the rear or that toward the chamber h', and *and* arrange the dampers i on the same side of the vertical flues n, that is to say, in the end of the side horizontal flues next to the chamber h'. Then, when the dampers are open, the smoke, etc., enters the chamber h' under the holes g, as before described, though when they are closed the operation of the diving flues will be the same as in the construction of stoves heretofore used, that is, the smoke, etc., will pass down the side and out through the central, vertical, or diving flues.

The particular advantage is, as already set forth, in the increased facility with which cooking utensils can be heated in the holes g.

There is also the further advantage of a better draught and a more effectual application of heat to the oven.

What we claim as our invention, and desire to secure by letters patent, is—

1. In an extension-top stove the arrangement of horizontal side flues leading from the chamber h to the chamber h' with dampers, i, at either end of such chambers, substantially as and for the purposes set forth.

2. In an extension-top stove the arrangement of horizontal and diving flues and dampers, such that whether the dampers be opened or closed the smoke and other products of combustion will enter the chamber h', of the extension at or near its sides, and under the holes g, substantially as described.

504 In testimony whereof we, the said James H. Mitchell and Thomas S. Mitchell, have hereunto set our hands.

JAMES H. MITCHELL.
THOMAS S. MITCHELL.

Witnesses:
JOHN GLENN,
G. H. CHRISTY.

(Here follows diagram marked page 505.)

506, 507 **DEFENDANT'S EXHIBIT NO. 17.**

UNITED STATES PATENT OFFICE.

William J. Keep, of Troy, New York. Improvement in cooking stoves. Specification forming part of letters patent No. 121876, dated December 12, 1871.

To all whom it may concern:

Be it known that I, William J. Keep, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful improvements in cooking stoves; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a perspective view of a stove containing my improvements. Fig. 2 is a vertical section of the same on a line passing from front to rear. Fig. 3 is a horizontal section of said stove on the line $x' x'$ of Fig. 2. Fig. 4 is a vertical longitudinal section of the same on the line $z' z'$ of Fig. 3. Fig. 5 is a plan view of the upper side of the grate. Fig. 6 is a like view of its lower side. Fig. 7 is a side elevation of the same. Fig. 8 is an end elevation of one of the pivotal bearings for said grate, showing the "shaker" bar or lever in place. Fig. 9 is a perspective view of a section of the metal lining of the fuel-chamber. Fig. 10 is a vertical cross section of the same. Fig. 11 is a perspective view of a section of the "water-back." Fig. 12 is a perspective view of the rear end of the stove, with the reservoir broken away so as to show the chamber beneath the same and the means of communication between said chamber and the flues of the stove. Fig. 13 is a horizontal section of said reservoir on the line $x x$ of Fig. 1, and Fig. 14 is a vertical section of the same on the line $z z$ of said figure.

508 Letters of like name and kind refer to like parts in each of the figures.

My invention is an improvement in the construction and operation of various parts of a cooking stove, for which letters patent were granted to Philo P. Stewart, January 18, 1859, and to me, for certain improvements thereon, June 1, 1860; and it consists principally in a grate, provided upon its upper side with a series of transverse ribs, which is raised above the surface of its longitudinal bars for the purpose of protecting the latter from the intense heat of the burning fuel, substantially as hereinafter set forth. It consists further in the means employed for preventing the grate from dumping while being shaken, substantially as is hereinafter set forth. It consists further in the peculiar construction of the metal lining of the fuel-chamber, by reason of which its length is not affected by changes of temperature, substantially as is hereinafter shown. It consists further in the construction of said lining, which permits such ashes as may sift through its openings to fall upon the grate, substantially as is hereinafter shown and described. It consists further in the peculiar construction of the water-back, substantially as and for the purpose hereinafter specified. It consists further in the rearward-extended casing of the center rear flue, in combination with the contiguous portion of the reservoir and with the heating chamber surrounding the lower part of said reservoir, and extending below the upper end of said casing, substantially as and for the purpose hereinafter shown. It consists further in the diving flue, situated in front of the reservoir, and between the same and the rear casing of the vertical flues, when its upper open end and the lower side of its only opening into said vertical flues are upon such as to cause the heated escaping products of combination to enter said flue at the same point and at the same angle, whether the direct or reversed draught is employed, substantially as and for the purpose hereinafter shown and described. It consists further in a heating chamber for inclosing the lower portion of the reservoir, situated beneath the extended top plate and in rear of the verti-

cal flues, and with its bottom below the oven-top, when the only passage to the same for the heated escaping products of combustion is upon a line with said oven-top, substantially as and for the purpose hereinafter specified. It consists further in constructing the side and rear walls of the heating chamber beneath the reservoir, with an offset
509 immediately above the upper edge of the warming closet, for the purpose of inclosing said upper edge and bringing the vertical exterior surface of said combustion-chamber and warming closet flush with each other, substantially as hereinafter shown. It consists finally in the employment of one or more lugs, secured to and projecting horizontally outward from the casing of the heating chamber beneath the reservoir, and passing through corresponding openings within the contiguous portion or portions of the warming closet, for the purpose of securing the latter to or upon the stove, substantially as is herein shown and described.

In the annexed drawing A represents the top plate, B the bottom plate, C the side plates, and D and E the rear and front end plates, respectively, of the stove, inclosing an oven, F, a fuel-chamber, G, suspended within the front and upper corner of the latter, and the usual system of flues, all of which are substantially the same as in the Stewart stove, improved and patented by me June 1, 1869. Resting within suitable bearings, *h*, formed at the ends and upon the lower side of the frame or bed-plate H, is a grate, consisting of a central bar, I, the ends of which form the axial pivots *i* upon which said grate revolves, two cross-bars, K, secured to or upon said bar I immediately inside of said frame, and two open grated sections, L, placed upon opposite sides of said bar I, with their ends resting upon and supported by two cross-bars, *k*, which are placed at a short distance below and connected with said cross-bars K. Pivoted to or upon the lower side of the outside pivot *i* of the bar I is a short bar, M, having attached to its inner end and forming a part of the same a cross-bar, M', which extends laterally and horizontally outward in opposite directions, and has its ends loosely connected with the corresponding ends of the grated sections, L, the whole being so arranged as to permit said bar M to have a reciprocating horizontal movement upon its pivot, which movement is communicated to said grated sections and causes them to move longitudinally in opposite directions and at the same time, the object of which is to cleanse the fuel resting upon the grate from ashes, slate, etc. When it is desired to remove the entire contents of the fuel chamber the grate may be turned toward the front upon its pivotal bearings, so as to dump said contents in the ash-pit in the usual manner; but if said grate were constructed with plane or horizontal upper or lower surfaces, and had a sufficient depth to insure durability, the space between its upper face, when said grate
510 is turned to a vertical position, and the side of the frame or bed-plate H would not be sufficient to permit coal or cinders of ordinary size to pass downward. To remove this objection, and also to cause the fuel to settle toward the center of the grate and away from the sides of the fuel-chamber, I construct each grated section L with its upper face inclining downward and inward, as seen in Fig. 2, by which means the distance between the side of the frame and the center of the said grate, when tilted, is increased in proportion to the dish of the latter, while the movement of the fuel toward the center of said grate, when placed horizontally, is in a like degree governed by the transverse shape of the same. The sec-

tions L are each composed of a series of short bars, l, arranged transversely in parallel lines, and at equidistant points upon and connected with two longitudinal bars, l', the latter of which, from their length, are liable to injury from the heat of the burning fuel. To prevent such action of the heat, the transverse bars are constructed considerable higher than the longitudinal bars, and receive and sustain the fuel, so as to prevent, in a great measure, the same from coming into contact with the latter. A like effect is produced with reference to the sides of the bed-plate or grate frame by making the adjoining sides of the grate sufficiently above said frame to prevent the fuel from resting upon the latter. In order to prevent the transverse bars from warping, their upper sides are notched, and the remaining portion of said sides allowed to expand freely without affecting the balance of the bars. In order that the grate may be shaken or dumped, the outer end of the pivoted bar M (which projects through a suitable opening within the side plate C, immediately beneath the end door of the fuel-chamber) is flattened upon its vertical sides, and provided upon its upper side with an upward-projecting spur, m, immediately inside of which is a semi-circular depression, m'. The handle or shaker N is provided at its end with a longitudinal vertical recess, which corresponds with and receives the end of the bar M, while upon the upper side of said shaker is provided a cross-bar, n, which extends transversely across its recess, and, when the device is in place, rests within the depression, m' so as to lock said parts in longitudinal position. A lug, n', projecting horizontally outward from the side of the shaker and toward the rear of the stove, passes under a similar lug, c, which projects outward from the side plate C, and prevents the grate from dumping while said shaker is in a horizontal posi-
tion, without in the least interfering with the free horizontal move-
511 ment of the latter. When it is desired to dump the grate, the
shaker is turned to a vertical position, and thereby the lug n with-
drawn from beneath the lug c, so as to offer no obstacle to the turn-
ing of said grate.

It is well known that for use in constructing the sides of a fuel chamber iron is in most respects superior to fire-brick or any other similar article, as its durability, if properly proportioned, is much greater, while cinders, which form upon and adhere to fire-brick to such a degree as to soon obstruct the fuel-chamber, do not in the slightest degree interfere with the metal lining. While possessing such advantages, the expansion and contraction of metal linings, and the consequent breakage or displacement of the same or other portions of the fuel-chamber, has proved so great an objection as to prevent their use from becoming general. To obviate this objection, and secure certain advantages, I construct my lining in the form shown in Fig. 9, the back wall O being straight and solid, with a horizontal flange, o, secured to and extending rearward from its lower edge, while the front wall O' of said lining is perforated, and from its point of union with the upper edge of said rear wall extends outward and downward to within a short distance of the lower edge of the latter, and forms between the same a space, o', open at its lower side. A series of vertical ribs or braces, o'', extending between the front and rear walls, attaches said parts more firmly together and insures their relative positions. At the longitudinal center of the lining, where the heat from the burning fuel is greatest, the front wall O' is divided from its lower edge upward and

outward in diverging lines, so as to form a central portion, O'', separated from the back wall, and capable of an independent vertical movement. Two flanges, *o'''*, extending latterly outward from the edges and back of said part O'' and fitting behind the contiguous portions of the front wall O', insure the horizontal positions of said parts without impeding the free vertical movement of the former. As thus constructed, the expansion or contraction of the central portion of the front wall of the lining, and its consequent elongation, can have no other effect than to cause said part to rise upward, its combined lower edges giving to it the form of a wedge, upon which the corresponding edges of the balance of said wall operate as double inclined planes. When placed within the fuel-chamber the front side of
the rear wall O of the lining is nearly on a line with the inner
512 edge of the bed-plate, so as to cause the front wall O' to project
over the contiguous edge of the grate and bring the space *o'* between said walls immediately over the space left between said bed-plate and grate, by which means a portion of the air that passes upward through or around said grate enters said space within said lining and escapes therefrom into the combustion-chamber through a large number of small openings, while ashes passing outward through said perforations fall directly upon the grate, instead, as in ordinary perforated linings, of lodging upon the base-plate and obstructing the communication between said perforations and the air beneath the grate. Resting upon the top oven-plate F', at its intersection with the back plate G' of the fuel-chamber, is a pipe or water-back, P, which extends forward over said fuel-chamber, and has its lower wall dropped downward, as seen in Fig. 2, from said back plate to its front edge. The front wall of said water-back has a notched or serrated form, so that, while extending outward to a considerable distance over the fuel-chamber, but slight obstruction is offered to the upward and rearward passage of the heated escaping products of combustion, the same passing readily between the projections *p*. The forward portion of the water-back having a considerable greater depth than its rear portion, the cold water, upon entering its interior, will at once, from its greater density, pass downward and forward into the projections *p*, where, from the large surface exposed to the action of the heated gases of or from the fuel-chamber, said water becomes quickly heated, and, rising, passes rearward into the straight water-channel formed at that point, and through the same escapes from the stove. As in the original and improved "Stewart Cook," the top plate A is extended beyond the rear end plate for the purpose of receiving and sustaining a water-reservoir, Q, but, unlike said stoves, the chamber R formed beneath said extended top plate A' extends downward below the top oven-plate, F', to a distance equal to if not greater than that from said top oven-plate to the top plate A, while the exit flue, instead of being formed within and passing upward through the reservoir, commences at the rear central portion of said extended top plate, where a suitable collar, S, extending horizontally inward so as to be entirely within the line of said plate, is provided for the reception of the exit pipe. The passage T from the flues of the stove to the chamber R is at the upper end of the center vertical flue, and is formed by removing
the rear plate D across the entire width of said flue and from the
513 top plate A to a point upon a line with the top oven plate F'.
Immediately between the opening thus formed, the upper edge *d*

of the rear end plate D is curved rearward, as shown, the purpose of which will be hereinafter explained. The reservoir Q has, preferably, a slightly greater depth below than above the top plate, and at the latter point has a general rectangular form, except at its rear side and transverse center, where it extends inward in a curve corresponding in size and shape to the collar S, and furnishes space for the same and the exit pipe. The portion of the reservoir below the top plate corresponds in shape to that placed above said plate, but is considerably less in capacity and horizontal size, the front wall of said lower portion being upon a line with and resting against the curved portion *d* of the rear end plate D, while the bottom, ends, and rear side of said reservoir are placed at a sufficient distance from the contiguous portions of the chamber R to insure a free circulation between the same of the heated escaping products of combustion as they pass from the flues of the stove to the exit pipe. As thus arranged, it will be seen that the escaping gases entering the chamber R are compelled, by the rearward-curved end plate *d* and adjoining front wall of the reservoir, to divide and pass around the ends of and beneath said reservoir until they reach the rear side of the latter, when they again unite in and pass upward through the recess *q* formed within its rear side, from whence they escape into the exit pipe, said gases having in their passage communicated to said reservoir and its contents a larger percentage of their heat than would be possible had the bottom of the reservoir been upon a line with or above the opening T, or had the current of said gases not been compelled to divide and pass around its ends. The opening T, between the chamber R and the flues of the stove, being placed upon a line horizontally with the top oven flue, the direction of the heated escaping products of combustion as they pass from the stove into said chamber, R, is the same, whether the direct or reversed draught is employed. The warming-closet U conforms to and fills the space vertically between the bottom plate B and the lower side of the chamber R, and horizontally between the rear end plate D and the rear edges of said chamber, with its front lower corner resting upon and supported by the rear end of said bottom plate, all in the usual manner; but, unlike other closets, its upper edge is received by and contained within a corresponding rabbet, *r*, formed
514 within the side walls of said chamber, R, so as to cause the exterior faces of the same and of said closet to coincide or be flush with each other. The closet is secured in place by means of one or more lugs, V, which project horizontally outward from the rear wall of the chamber R, and pass through corresponding openings formed in and through the contiguous wall of said closet, a lateral opening being provided in and through each lug immediately outside of the wall of said closet for the reception of a pin, *v*, which pin, while in place, securely locks the parts together.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. A stove-grate provided upon its upper side with a series of transverse ribs, which is raised above the surface of its longitudinal bars, substantially as and for the purpose shown and described.

2. The means employed for preventing the grate from dumping while being shaken, consisting of the shaker N, provided with the lug *n′*, and connected to or with the outer end of the spindle or pivoted bearing M, in combination with the lug *c*, secured to and projecting horizontally out-

ward from the side plate C, or their equivalents, substantially as shown and described.

3. A metal lining for a fuel-chamber, so constructed as that the expansion of a high degree of temperature shall increase its vertical dimensions without changing its length, substantially as and for the purpose specified.

4. A metal lining for a fuel-chamber, consisting of an imperforate rear wall, O, and a perforated front wall, O′, meeting at their upper edges, and from thence extending downward and apart so as to form an air-space, *o′*, having its lower side within the fuel-chamber, substantially as and for the purpose specified.

5. A water-back, constructed with a lower front channel for receiving and containing the water to be heated, and a rear upper channel for the reception and passage of said water when heated, substantially as and for the purpose shown.

6. The water-back P, having its front edge serrated so as to form the projections *p*, substantially as and for the purpose shown and described.

7. The rearward extended portion *d* of the rear end plate or casing D of the center vertical flue, in combination with the contiguous portion of the reservoir Q and with the heating chamber R, surrounding the lower part of said reservoir and extending below the top oven flue, substantially as and for the purpose specified.

(Here follow 5 diagrams marked pages 515–524.)

525 8. The diving flue, R′, situated in front of the lower portion of the reservoir Q, and between the same and the rear casing D, of the vertical flues, when its upper end and the lower side of its only opening into such flues are upon such a line as to cause the heated escaping products of combustion to enter said flue at the same point and angle, whether the direct or reversed draught is employed, substantially as and for the purpose shown.

9. A heating chamber for enclosing the lower portion of a water reservoir situated in rear of the vertical flues, and with its bottom below the oven top, when the passage thereto for the entrance of the heated products of combustion is upon a line with said over top, substantially as and for the purpose set forth.

10. The chamber R, provided with the rabbet *r*, formed within its exterior vertical side walls for containing the upper edge of the warming closet U, in combination with said closet, substantially as and for the purpose specified.

11. The means employed for securing the warming closet to or upon the heating chamber, consisting of one or more lugs, V, projecting horizontally outward from said chamber and passing through corresponding openings within the contiguous portion or portions of said closet, substantially as shown and described.

In testimony that I claim the foregoing, I have hereunto set my hand this 12th day of June, 1871.

WILLIAM J. KEEP.

Witnesses:
C. H. Adams.
Jno. H. O'Brien.

526

Defendant's Exhibit No. 18.

UNITED STATES PATENT OFFICE.

George H. Phillips, of Troy, New York. Improvement in reservoir cooking stoves. Specification forming part of letters patent No. 86585, dated February 2, 1869; reissue No. 4219, dated December 27, 1870.

The schedule referred to in these letters patent, and making part of the same.

I, George H. Phillips, of the city of Troy, county of Rensselaer and State of New York, have invented a new and useful improvement in reservoir cooking stoves, of which the following is a specification:

The nature of my invention consists in constructing a water reservoir at the back of the cooking stove (and below the horizontal line of the top plate of the stove) with a recessed bottom, raised within, and formed so that when closed below it will become a horizontal flue or passage of escape for the products of combustion on their way to the exit pipe, and thereby heating the reservoir and its contents.

It also consists in the construction of an opening in and through the back plate of the stove opposite the flue formed by the recessed bottom before mentioned, and in combination therewith, so that the products of combustion will pass directly from the stove into the flue of the reservoir, and through the same to the vertical flue, and then upward to the exit pipe.

It also consists in constructing a reservoir at the back of a cooking stove, and in such combination therewith that the products of combustion, in their escape to the exit pipe, must pass through the interior of the reservoir, the reservoir being located below the horizontal line of the
527 top plate of the stove, and having a flue constructed within as a
passage for the products of combustion, and there being no other outlet, so that, whether a direct draught or a reversed draught is used, the water in the reservoir may be properly heated thereby.

It also consists of a plate, or its equivalent, forming the bottom of the flue formed by the recessed bottom of the reservoir, and secured properly to the bottom of the reservoir, and also securely fastened to the back plate of the stove.

It also consists in the admitting the products of combustion directly from the stove proper into a water reservoir, situated, located, and arranged on the back of a cooking stove, and below the top plate of the stove, so that the water in the reservoir will be heated by the products of combustion on their way to the exit pipe.

The object of the several parts of my invention is as follows, viz:

By recessing the bottom of the reservoir I keep the heat within the same, so that but little can escape elsewhere. As all but the bottom plate of the flue thus formed is within the reservoir, and as the water can circulate and lie nearly all around the said flue, I gain in heating surface; then, by thus recessing the flue and constructing it within and above the bottom horizontal line of the reservoir, I gain more room and space within a warming closet when placed, as usual, below the reservoir; and in thus recessing the bottom I shorten the extent of the direct draught from the stove, as it enables me to have the opening from the flues of the stove placed higher up and nearer the top of the oven, and thereby increasing the force of the direct draught. And in the construction of a reservoir with a vertical flue within its walls, and taking the products of combustion out from the flues of the stove and into the flue of the reservoir, I obtain an easy and perfect mode of heating the same, either by a direct or a reversed draught, and while the heating is simplified and under better control than heretofore; and I also economize in material, and render easier the process of molding.

DESCRIPTION OF THE ACCOMPANYING DRAWING.

Figure 1 is a perspective view of my improved cooking stove.

Figure 2 is a longitudinal central vertical section of the same.

Figure 3 is a detached elevation of the water reservoir removed from the stove, showing the wall which joins the stove and the end of the recessed flue, dotted lines to represent the vertical flue.

528 Figure 4 is a rear elevation of the stove, the water reservoir being detached.

Like letters of reference indicate like parts in the several figures.

GENERAL DESCRIPTION.

A in the drawing represents a cooking stove of the usual form, and having a flue space over the oven at *a*, rear vertical flue or flues at *c*, and bottom flue or flues at *b*, and a front flue or ash pit as usual at *d*. And my invention is applicable to any of the ordinary modes of construction adopted in stove manufacture, the only alteration required in the main body of the stove being the closing of the exit-pipe collar, usually located directly over the rear ascending flue, and in causing an equivalent opening to be made in the rear vertical plate of the stove at *e*.

When casting the top plate of my stove I omit the usual pipe collar and exit opening, and when casting the back vertical plate I provide a circular opening, *e*.

Bolted to or otherwise secured to the rear end of the top plate of the stove is the reservoir D, its front end made to conform to the back vertical plate of the stove, and fitting closely thereto. The bottom of the reservoir is recessed or formed by casting or otherwise a horizontal flue, E. This recess is so constructed that when closed by a plate at the bottom it forms a flue.

At F is shown a vertical pipe, also forming a flue, and joining the horizontal flue E, forms an elbow therewith. This flue is also cast or formed as an integral part of said reservoir, and may be located centrally in the interior of the same, or forward or backward, as deemed best by the manufacturer.

The reservoir is provided with lids, G, and is intended for containing water to be heated.

H is a damper between the partitions I or flue-strips, dividing the center flue when three flues are used. The said damper, when in a horizontal position, allows a direct draught to be used, in connection with a down or lower draught, through flue *b*, both passing through the reservoir, and thus keeping up an even heat at all times. When, however, the damper H is in a vertical position, the direct draught is shut off, and only the lower or reversed draught passes through the reservoir.

At C is shown the plate formed to cover the horizontal flue of

529 the reservoir, marked E, and is either cast with the rear vertical plate of the stove or properly secured thereto, as deemed best; and it is also securely fastened to the bottom of the reservoir, so that a perfect flue is formed, as before mentioned, by the recess or indentation of the reservoir bottom and the plate C, as shown on the drawing.

The advantages of the construction herein described of my improved reservoir cooking stove are that the products of combustion, after doing duty in the body of the stove in boiling, baking, and the various processes of cooking, then pass entirely through the reservoir, imparting heat thereto, and heating the water therein with either a direct draught or reversed draught, without in any way retarding or interfering with the baking processes in the oven.

One difficulty found in stoves with reservoirs as usually and here'fore constructed is, that while baking in the oven, should fresh or cold water be placed in the reservoir, the oven becomes cooled and the operation of baking retarded, and with some articles resulting in their injury as palatable articles of food. All this difficulty I overcome by my mode of construction. I also obtain a great heating surface within the reservoir, so that all the heat is saved, and a more even and uniform heat obtained, and I gain sufficient room below the reservoir for a warming closet, if desired, as the flue of the reservoir encroaches but slightly, if at all, on such space.

I am aware that a flue has been carried along under the bottom and up the back of a reservoir, and a flue has been carried all around a reservoir similarly located, the flues being entirely outside the same, and the reservoir bottom being level and without a recess or indentation; and I am also aware that a pipe has been carried vertically through a reservoir located wholly above the top plate of the stove. These modes of construction and arrangement I do not claim. The latter does not heat well enough, and the former are too expensive and difficult, especially in casting.

Thus it will be seen that my mode of construction is more economical, readily molded, and more efficient in operation.

Having thus described my invention,

What I claim, and desire to secure by letters patent, is—

1. A water reservoir, constructed in such manner that it has a vertical flue through it, and, by the addition of one plate, a horizontal flue also running through the same, and uniting or combining the said reservoir
530 with a cooking stove, against the back of the stove, its upper surface flush with the stove top, the said flue or flues of the reservoir being the only outlet of escape for the products of combustion from the stove to the exit pipe, substantially in manner as described and set forth.

2. In combination with the reservoir so constructed the plate C, forming the bottom of the horizontal flue E, substantially in manner as described and set forth.

GEO. H. PHILLIPS.

Witnesses:
JOHN A. GRISWOLD.
RICHARD H. REILLE.

(Here follows diagram marked page 531.)

G. H. Phillips,

Reservoir Cook Stove.

No. 4,219. Reissued Dec. 27. 1870

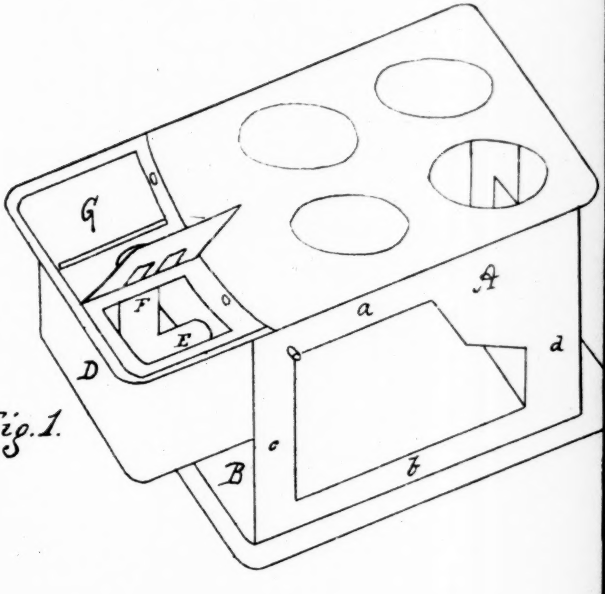
G
F
E
D
A
a
d
c
b
B

Fig. 1.

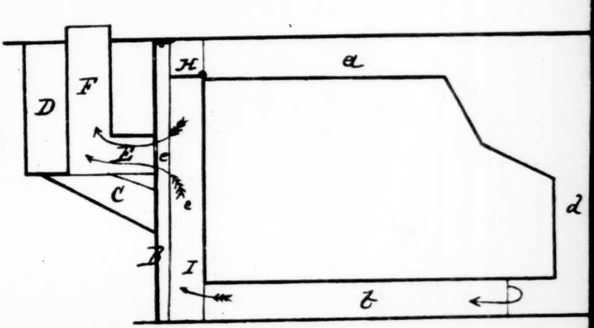
H
a
F
D
E
c
C
e
B
I
b
d

Fig. 2.

Fig. 3.

532, 533 **DEFENDANT'S EXHIBIT No. 19.**

UNITED STATES PATENT OFFICE.

John B. Crowley and Addis E. Chamberlain, of Cincinnati, Ohio, assignors to Chamberlain & Co., of same place. Improvement in cooking stoves. Specification forming part of letters patent No. 111517, dated February 7, 1871.

The schedule referred to in these letters patent, and making part of the same.

We, John B. Crowley and Addis E. Chamberlain, both of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain improvements in stoves, of which the following is a specification:

Our invention relates:

First, to a novel manner of constructing and arranging flues for supplying hot air to the fire box or chamber; and

Second, in an improved manner of constructing a rear extension of a stove for supporting a water reservoir or boiler.

Figure 1 is a perspective view of a stove having our improvements embodied therein, the top being removed.

Figure 2 is a perspective view of the top lifted from the body and turned up so as to expose the under side.

Figure 3 is a perspective view, showing a modified form of the air flue.

Figure 4 is a longitudinal section of the top of the stove detached, showing the rear extension and the smoke-box attached thereto.

Figure 5 is a perspective view of the box detached from the top.

In the drawing—

A represents the body of the stove, which, in its general construction, may be the same as any one of those now in use.

534 In the forward part of the body is the usual fire-chamber G, the front side of which is formed by the vertical front plate of the stove.

On or against the inner side of the said front plate is a box or chamber, F, open at both top and bottom.

Against each inner side of the body, at the top and just in rear of the fire-box, a flange, H, is made as shown in Fig. 1, so as to form a box or chamber, E, at each side of the stove, said chamber being open at the top.

In the drawing the bottom of chamber E is formed by the top plate of the oven; but in some instances, where the oven is differently located, it will be necessary to cast a bottom in said chamber.

B represents the top plate of the stove, provided on the under side with suitable flanges to fit over the upper edges of the body A, the box F, and the flanges H.

The top, when applied to the stove, closes the upper side of box F and chambers E.

In each side of the top plate is a register, D, which, when the top is in place, communicates with the corresponding chamber E, so as to admit cold air from the room into said chamber.

Under each front cover of the top B is a flat L-shaped plate, I, having its inner edge secured to a depending flange, K, on the under side of the top plate, as shown in Figs. 2 and 4. These plates are arranged parallel with the top, but a little below the same, so that an air space, E′, is left between the plate and top.

When the top is applied to the body the forward ends of plates I fit against the ends of box F, which is cut away so as to admit air from the space E′ over the plates. The rear ends of the plates fit in like manner against the front ends of chambers E, so that a continuous passage extends from each register, D, along the side and across the front of the body to the box F.

The space' between the outer edges of plates I and the top are closed by the vertical plates of the body which extend up past the edges of the plates I.

When the registers D are opened air passes through them into chambers E, and thence along over plates I, down through box F, and out into the fire-chamber.

As the chambers or flues through which the air thus passes are subjected to the direct action of the fire, the air in its course becomes heated
535 to a very high temperature, and is introduced into the fire-chamber in that state, thus materially aiding combustion therein.

The stove is, of course, provided with the usual doors or dampers at the front for admitting air from the room directly to the fire. When starting the fire these doors are opened and the registers D closed; but as soon as the stove becomes heated the doors are closed and the registers opened.

Instead of placing the registers in the top they may be placed in the sides of the body; or, instead of using registers, the chambers E may be cast in one piece with the side of the body, as shown in Fig. 3, with their outer side left open to admit air.

Besides serving to conduct the air, the plates I and flanges H protect the top plate from the direct action of the fire, so that the top is not liable to "burn out" or to crack from being suddenly heated or cooled, as is the case in stoves of ordinary construction.

The supplying of heated air to the fire is, we are aware, an old idea; but by our method of construction we are enabled to heat the air to a higher temperature than can be done by other stoves, and, at the same time, to reduce the cost of manufacturing this class of stoves.

The construction of the rear extension is as follows:

The top plate B is made of such length as to extend a considerable distance behind the body, and is formed with a neck, *a*, to receive the smoke-pipe, and also with an opening, O, of suitable size and form, to receive the bottom of the water-vessel.

A shallow box or pan, C, having laterally projecting flanges, L and N, around its upper edges, is also provided, as shown in Fig. 5, and placed against the under side of the extension of the top, as shown in Figs. 2 and 4.

This pan is supported in place by resting its front flanges, L, on the upper edge of the back of the stove body, and passing a screw, M, through its rear edge, or a lug thereon, into the top plate, as shown in Figs. 1 and 3.

An opening, J, is made through the front of box C, so that, when the pan is in position, this opening will communicate with the smoke-flue P of the stove, and thus the smoke and flame be carried through the box C, in their passage from the stove, as indicated by the arrows in Figs. 2 and 4.

The box or pan C is made of such size as to extend laterally
536 beyond the sides of opening O for the water-vessel, so that, when the latter extends downward through the hole, the heat and flame will

act not only upon its bottom, but also upon the sides of the vessel below the top plate. In this manner a larger heating surface is obtained, and the heat applied with more economy and advantage than usual.

Another advantage of our plan of construction is, that it permits the top plate and its pan to be made of such width as to receive a boiler of the full or a greater width than the body of the stove.

Our method of constructing the extension and the pan C, and of attaching the latter, we have found to be very cheap, strong, and advantageous, and in many respects superior to all others in use.

Having thus described our invention,

What we claim is—

1. The flues, E, E′, and F, arranged substantially as described, whereby the inflowing air is heated on its passage to the fire-chamber, as set forth.

2. The extension pan or plate C, having its front flange L resting on the vertical plates of the stove body, substantially as described.

3. The extension pan or plate C, having its side flanges N projecting laterally beyond the vertical sides of the stove, substantially as and for the purpose set forth.

JOHN B. CROWLEY.
ADDIS E. CHAMBERLAIN.

Witnesses:
M. W. OLIVER.
S. S. MORRIS.

(Here follow 2 diagrams marked pages 537–540.)

541 DEFENDANT'S EXHIBIT BUSSEY REISSUE.

UNITED STATES PATENT OFFICE.

Esek Bussey, of Troy, New York. Cooking stoves. Specification forming part of letters patent No. 51292, dated December 5, 1865. Reissue No. 2319, dated July 24, 1866.

To all whom it may concern:

Be it known that I Esek Bussey, of the city of Troy, county of Rensselaer, and State of New York, have invented new and useful improvements in cooking stoves, for and upon which letters patent of the United States of America were granted to me, bearing date the 5th day of December, 1865; and I do hereby declare that the following is a full, clear, and exact description of the nature, construction, and operation of the same, reference being hereby had to the accompanying drawings, which make a part of this my new, corrected, and amended specification, and I now surrender the said letters patent in order that the invention and improvements aforesaid may herein be more fully specified and set forth, and by such amended specifications, drawings, and claims, my right thereto therein shall be more fully and permanently protected as by law provided.

Like letters represent and refer to like or corresponding parts in the accompanying drawings.

Fig. 1 is a central and vertical section from front to the rear of a cooking stove, showing my invention and improvements thereto applied in such manner that the hot air and escaping products of combustion shall pass directly under a part or portion of the bottom of the reservoir or boiler, and at the same time come in contact with that side, part, or portion of said boiler which forms and completes the whole or part of the end plate of the stove as herein described.

Fig. 2 is a section on a line between the rear end oven vertical plate and the reservoir or boiler aforesaid.

542 Fig. 3 is a perspective view of said reservoir or boiler and which is constructed, arranged, and combined with a cooking stove, in the manner substantially as shown at Figs. 1, 2, and at Fig. 5, and for the purposes substantially as hereinafter described and set forth.

Fig. 4 is a top view of the rear end of such stove, and showing the extension or outward rear end projection of the top plate, which plate contains an opening hole or aperture of size, form, or shape, to correspond to the size, form, and shape of the upper part of said boiler or reservoir, and by which the same is held, supported, or suspended in part or in whole, and in, and against the rear end of said cooking stove, in the manner and for the purposes substantially as herein described and set forth.

Fig. 5 also represents a cooking stove divided on a vertical central line, from front to the rear or back end thereof, and containing and showing my said invention and improvements thereto applied, in such manner that the hot air or escaping products of combustion may or shall come against and in contact with all that part or portion of such reservoir or boiler, which forms the back or rear vertical end plate of such stove or some part or portion thereof, in the manner and for the purposes substantially as shown and set forth in said fig., and also at Figs. 1 and 2 of the accompanying drawings, and for the purposes described and set forth in this specification.

The nature of my said invention and improvements is substantially as follows, to wit, and consists in the outward extension and projection in a horizontal line or plane, from over and beyond the rear and vertical end of a cooking stove of the upper or top or boiler hole plate thereof, so as to allow and permit the making or formation of an opening or suitable hole or aperture in and through that part of such plate so projecting and extending, of a sufficient size, form, or shape, and capacity to correspond to and with, and to receive, contain, or support in some good and substantial manner the upper part or portion of the aforesaid reservoir or boiler, and through which opening the water or other material must pass, while the same enters such boiler or reservoir when designed to be put therein for any purposes whatever, in the manner substantially as herein described and set forth.

It also consists in the employment and arrangement as well as combina-
tion of a boiler or reservoir aforesaid, upon the immediate rear vertical end
of a cooking stove, so that that side, part, portion, or surface next
543 thereto shall form and complete the rear or outer end vertical plate
of the stove or some part or portion thereof, in the manner and for
the purposes substantially as herein described and set forth.

It also consists in the formation and completion of the vertical end or rear flue or flues of a stove, for the exit or passage of hot air or heated products of combustion in the draught of the stove, by means of the said boiler or reservoir, in such manner as to bring such hot air or escaping products of combustion against and into direct and positive contact with that part or portion of said reservoir or boiler which so forms and completes the said flue or flues of such stove, as well as to form or continue and complete the vertical end plate in whole or in part aforesaid, substantially as hereinafter described and set forth, and thereby warm or heat to any desirable degree the water or other material contained within such reservoir or boiler, arranged and combined with such stove in the manner substantially as shown in the accompanying drawings.

Having thus described the nature of my said invention and improvements, I will now and here proceed to describe the construction and operation of the same, so as to enable those skilled in the art to make, manufacture, and put such invention and improvements into general or public use, which is as follows, to wit: In the accompanying drawings, A represents the aforesaid named boiler or reservoir, which of course may be of any size, shape, or capacity desired, and it may be made of any suitable material which will answer the purposes required, one side of which will always be constructed in size, form, or shape to answer to and to correspond with the size, shape, and form of the rear end or other part of the cooking stove to which it is designed to apply my said invention, so that such side of such boiler or reservoir will form and complete the rear and vertical end plate, flue or flues, as the case may be, and which flue or flues lead to the exit passage B, and through which pass the heated air and escaping products of combustion. C is the lateral plate and vertical end casing of the cooking stove, as well as of the flue or flues D.

In carrying my said invention and improvements into practical use and operation, I may, if found desirable so to do, extend the said boiler or reservoir to various widths and depths along and down the said vertical end flue or flues of said stove in the manner and form substantially as indicated in and by the dotted lines upon the accompanying drawings,
544 as shown at *x x*, in Figs. 1, 2, and 5, and I may construct the rear end
of the stove in which the aforesaid boiler or reservoir and exit passage are arranged and therewith combined as aforesaid, and with either two lateral descending or diving flues and a central ascending flue, as shown in full lines in the said drawings, or with a descending flue on one side and an ascending flue on the other side, as indicated by the dotted lines of partition at *y y*, in Fig 2, or with one broad ascending and descending sheet flue, or with one broad ascending sheet flue, or by any other suitable arrangement of such flue or flues whereby my said invention and improvements can or may be applied, and thereafter carried into practical and successful use and operation.

The said boiler or reservoir should be firmly and securely attached to and in the rear end of the cooking stove for the purposes aforesaid, by any mechanical means suitable for that purpose, and thereby make the said flue or flues air-tight, so as to prevent any escape of smoke or other products of combustion into the room where such stove is being used.

In the accompanying drawings the top or boiler-hole plate E of the stove has an elongated opening, hole, or aperture, E′, Fig. 4, and which is occupied with and which contains the said boiler or reservoir A, as in Figs. 1, 2, and 5, and which boiler, or any substantial equivalent thereof, may be attached to or combined with the said outward projection or extension of the said plate E in any suitable form, manner, or means, so long as said

opening E′ shall correspond and conform to the size and shape of the immediate top of such boiler or reservoir A, Fig. 3. In the accompanying drawings I have deemed it best to show but one of the various ways or means by which said boiler or reservoir may be brought into contact and combination with the said outward extended and projecting top or boiler-hole plate E, and the opening or aperture E′ therein, for the purposes substantially as aforesaid, which is as follows, to wit: surrounding the said opening or aperture E′ there is a ring-like projection, *f*, Figs. 1, 2, and 5, in which a corresponding part of the said boiler A will occupy and there be held by the aid and means of the flanch *g*, same figs., and which is upon the surrounding rim of said boiler or reservoir, so, therefore, any convenient means may be employed to combine the said reservoir with the aforesaid opening E′, and with the said outward projection and extension of the said plate E, which projection will, in all cases, correspond to
545 and with the size and shape of the said boiler or reservoir, arranged below the said extended top plate and immediately in the rear of the back end of a cooking stove.

When the said boiler A is constructed and arranged so as to form and complete the said rear end vertical plate of the stove in the manner and for the purposes substantially as aforesaid, it will remain and rest upon the projection or flanch *i*, Figs. 1 and 5, which is constructed for that purpose, so as to firmly and securely hold said boiler or reservoir in its required place and position, substantially as shown at Figs. 1, 2, and 5 of the said drawings, and which flanch is cast upon the immediate upper edge of the vertical end plate C′, and which is just underneath it and seen at Figs. 1 and 5. The said boiler A will rest upon said flanch *i* in any suitable manner which will best carry out and into successful operation my said invention.

Its location will depend upon the size of such boiler or reservoir so applied and used with such cooking stove.

J J′ are hinged lids or covers over the said boiler or reservoir, and upon the said outward projecting and extending top or boiler-hole plate of the stove, and, of course, covering the said boiler immediately below and in combination with the said plate E and opening E′ therein contained, substantially as aforesaid. The said lids or covers J J′ may be hinged at or near the center of said boiler opening E′, substantially as shown by dotted lines at Fig. 2, or it or they may be hinged upon the side of said opening E′, or at one or both ends thereof, and upon the side extended or projecting plate E in any good and convenient manner as may be deemed best.

The cooking stoves to which my said invention and improvements are or may be applied, substantially as aforesaid, will be made in the usual manner, and I generally prefer to make the said boiler or reservoir A of cast iron, and in but one part or piece, and which will, of course, be so made as to closely fit all that part of the said end vertical plate which may be or may have been removed, so as to allow said boiler to form and complete the aforesaid vertical end flue or flues in connection with that part of said plate remaining immediately below the said boiler A, if any there shall be, all depending, however, upon the size of the boiler or reservoir used as aforesaid, and thereby allow the hot air and escaping products of combustion to come into direct and positive contact with the side
546 of said boiler A in the manner substantially as shown in the said accompanying drawings, and as hereinafter described and set forth.

By the use of the aforesaid invention and improvements the boiler or reservoir A is more convenient to pour into and to dip out from, and it more directly, thoroughly, and completely absorbs and utilizes the excess of heat in the end or that part of the stove to which said boiler or reservoir is so attached and combined or applied than if it did not extend below the exit passage, but was entirely or wholly above the bottom of the latter on the top of the stove.

With the said invention the said boiler or reservoir and the exit passage for the circulation and escape of the heated air and waste products of combustion in said stove are much less in the way of any person using the said stove in culinary operations or for other purposes, and the said boiler or reservoir economizes more of the heat passing off from the stove through said exit passage than if the exit passage and said boiler were arranged separate and apart from each other, and in the different ends or sides of such stove. It is more convenient to so arrange and combine said boiler or reservoir upon the rear or back end of the stove as aforesaid, but it is quite manifest that by suitably constructing and preparing one or more sides of the stove with the required or necessary flues for the passage of heat or escaping products of combustion that the said invention and improvements may then be applied.

And since the said boiler or reservoir in my said invention and improvements is arranged immediately in the rear end, and forming a part or whole of the rear end of the cooking stoves, or so as to form a part of or the whole of the lateral casing on the outer side of a fire flue or flues below the exit passage for the escaping products of combustion, and so as to expose one lateral side or one part thereof of said boiler or reservoir directly to the flame or hot gases of combustion in the said vertical end and heat conducting flue or flues aforesaid, I thus and thereby save the expense in the stove of a lateral casing between the said flue or flues and the said boiler or reservoir A, and thus and thereby cause the same to become more easily, rapidly, and highly heated, and therefore more suitable for any purpose or use required of said boiler or reservoir than if it were arranged in contact with the outer surface of a lateral casing on the outer side of said flue or flues, by which the same are formed in the usual manner of completing the rear end of a cooking stove.

547 The end vertical plate C′, Figs. 1 and 5, may be made with an outward curve at or near the upper edge thereof, so as to form a permanent resting place for the bottom and inner edge of said boiler in case it may be deemed best to contract the said vertical end flue or flues for any purpose whatever, and still my said invention and improvements will not be changed, but will remain the same in principle and operation. If, however, the said boiler extends downward into the bottom plate of said stove, then there will be no use for or necessity of any vertical end plate or casing below said boiler, and, of course, that part of said boiler will rest down and upon the upper surface of said bottom plate of said stove substantially as indicated by the dotted lines at Figs. 1, 2, and 5. I prefer, however, to construct my said invention and improvements for use substantially as shown at Fig. 5 of the accompanying drawings. There are some other modifications of my said invention which I do not deem necessary here to describe in detail, as they are quite manifest to any me-

chanic of ordinary skill, and who can construct my improvements and put the same into successful use and operation in the manner substantially as herein described and set forth.

The draught of the stove will be the same as usually contained in cooking stoves, and the circulation of the heat is controlled in the usual way and by the usual means.

It is manifest that my aforesaid invention and improvements may be applied to any kind, form, or shaped cooking stove, and thus and thereby be put into successful use and operation.

Having thus described the nature, construction, and operation of my said invention and improvements, what I claim, and desire to secure by letters patent of the United States of America, is:

First. The outward continuation and extension of the top plate E of a cooking stove over and upon or near the upper part or top of the boiler or reservoir A, and containing therein an opening or reservoir aperture, E', for receiving into said boiler A, in the manner substantially as herein described and set forth.

Second. I claim the supporting of the boiler and reservoir A upon the vertical end plate C', in combination with the top plate E of a cooking stove, projecting or continuing outward with an opening or aperture, E', therein, or any equivalent thereof, in the manner and for the purposes substantially as herein described and set forth.

548 Third. I claim the employment of the boiler or reservoir A having its upper or open top, or part, in combination with the opening or aperture E' in the top projecting plate E of a cooking stove, in the manner and for the purposes substantially as herein described and set forth.

Fourth. I claim the arrangement in a cooking stove of a culinary boiler and an exit passage for the gases of combustion, both at one end of the stove, and so that the said boiler forms a part of the lateral casing on the outer side of a fire flue or fire flues in the end of the stove below the said exit passage, in the manner substantially as and for the purposes herein described and set forth.

Fifth. I claim the employment and arrangement of the boiler or reservoir A, or any equivalent thereof, within and upon the rear end of a cooking stove, and wholly or partly below the top plate thereof, so that one side of such boiler shall form and complete the lateral casing of the rear end vertical flue or flues below the top plate thereof and the bottom of said boiler in the manner and for the purposes substantially as herein described and set forth.

Sixth. I claim the construction of the rear end and vertical flues or flues of a cooking stove by means of the boiler or reservoir A and the lower vertical end or boiler supporting plate C', so that the hot air or escaping products of combustion shall come into direct contact with that part or portion of such boiler next adjoining such flue or flues, so as to warm or heat the water or other material in said boiler, in the manner substantially as herein described and set forth.

Seventh. I claim the removal of the lateral or vertical outside casing of a cooking stove, or some part or portion of the same, so the hot air or heated products of combustion may or shall come into contact with the boiler or reservoir, or some part or portion thereof next adjoining thereto, or in combination therewith, in the manner and for the purposes substantially as herein described and set forth.

In testimony whereof I have on this 7th day July, 1866, hereto set my hand.

ESEK BUSSEY.

In presence of—
MARCUS P. NORTON.
CHARLES WALTER.

(Here follow 3 diagrams marked pages 549–552.)

553–555 UNITED STATES OF AMERICA,
Eastern District of Missouri, ss:

I, M. M. Price, clerk of the circuit court of the United States in and for the eastern district of Missouri, do hereby certify that the writing hereto attached is a true transcript of the record and proceedings had, testimony and exhibits in case No. 1039 of Esek Bussey and others, complainants, against The Excelsior Manufacturing Company, defendant, as fully as the same remain on file and of record in said case in my office.

In witness whereof I hereunto subscribe my name and affix the seal of said court, at office in the city of St. Louis, in said district, this 4th day of October, A. D. 1880.

[SEAL.]
M. M. PRICE, *Clerk*,
By T. L. CRAWFORD, *D. C.*

556 The Supreme Court of the United States.

ESEK BUSSEY AND CHARLES A. MCLEOD, appellants,
vs.
THE EXCELSIOR MANUFACTURING COMPANY of St. Louis, appellees.

And now comes the said appellant and assigns for reasons of appeal or as an assignment of errors:

That in the decision of the said circuit court of the United States for the eastern district of Missouri, in said cause—

1st. The court erred in determining that the said reissued letters patent granted to Esek Bussey and Charles A. McLeod, as assignee of Esek Bussey, for an improvement in cooking stoves, dated February 1, 1870, and numbered reissue No. 3815, were invalid.

2d. The court erred in determining that the defendant the said Excelsior Manufacturing Company of St. Louis, did not infringe the said reissued letters patent granted to Esek Bussey and to Charles A. McLeod,
557 as assignee of Esek Bussey, for an improvement in cooking stoves,
dated February 1, 1870, and numbered reissue No. 3815, if the same were valid.

3d. That the court erred in overruling the exceptions taken to the master's report as to the amount of damages sustained by the complainants by the infringement by the defendants of two several letters patent granted to David H. Nation and Ezekiel C. Little for improvement in reservoir cooking stoves, dated September 16, 1873, and respectively numbered 142933 and 142933.

CHARLES J. HUNT,
Sol'r, & of Counsel for Appellants.

(Indorsed:) The Supreme Court of the United States. No. 1075. In equity. Esek Bussey and Charles A. McLeod, appellants, vs The Excelsior Manufacturing Company of St. Louis, appellees. Assignment of errors. Filed 25' October, 1880. Charles J. Hunt, sol'r & of counsel for appellants, 37 Congress street, West Detroit, Mich.

(Indorsement on cover:) No. 180. Esek Bussey and Charles A. McLeod, appellants, vs. The Excelsior Manufacturing Company, and No. 181. The Excelsior Manufacturing Company, appellant, vs. Esek Bussey and Charles A. McLeod. E. Missouri C. C. U. S. Filed 25th October, 1880.

110-131

Supreme Court of the United States.

OCTOBER TERM 1883.

ESEK BUSSEY, and CHARLES A. McLEOD.
Appellants.
vs.
THE EXCELSIOR MANUFACTURING COMPANY.
Appellee.
No. 180.

THE EXCELSIOR MANUFACTURING COMPANY.
Appellant.
vs.
ESEK BUSSEY, and CHARLES A. McLEOD.
Appellees.
No. 181.

APPEALS FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE EASTERN DISTRICT OF MISSOURI.

CHARLES J. HUNT,
Of Counsel for Bussey and McLeod.

SAMUEL A. DUNCAN,
Of Counsel for Excelsior Manufacturing Co.

Supreme Court of the United States.

OCTOBER TERM 1883.

ESEK BUSSEY, and CHARLES A. McLEOD. *Appellants.* vs. THE EXCELSIOR MANUFACTURING COMPANY. *Appellee.*	No. 180.
THE EXCELSIOR MANUFACTURING COMPANY. *Appellant.* vs. ESEK BUSSEY, and CHARLES A. McLEOD. *Appellees.*	No. 181.

May it please your Honors:

The two above entitled causes are as their titles import, the appeals of both, the complaninants Esek Bessey and Charles A. McLeod, and the defendant. The Excelsior Manufacturing Company of St. Louis, form a certain decree lately rendered in a cause pending in the Circuit Court of the United States for the Eastern District of Missouri. In Equity.

This suit was originally brought on letters patent granted to Esek Bossey and Charles A. McLeod dated February 1, 1870 Re-issue No 3, 815, and on five letters patent granted to David H. Nation and Ezekiel C. Little, dated September 16,1873 and numbered respectively 142,931, 142,932, 142,933, 142,934, 142,935, and also on a patent to David H. Nation, dated September 8, 1873, No. 142,717. The bill contained the averment of the use of the same by the defendant and prayed for an account of the profits made by the defendant and for an injunction, &c.

The defendant in its answer denied the use of any of the patents, except two granted to Nation & Little No. 142,933 and 142,934, and admitted that they had used those.

The defendant further alleged that all of these patents were anticipated by several patents hereinafter referred to.

During the taking of the proofs, the complainants with-drew from the case the patents of Nation & Little it numbered respectively 142,717, 142,931, 142,935, on the assurance of the defandant, that although the exhibit G showed these devices that it had not used them in the construction of their stoves which they put upon the market.

Such proceeding were further had that the said cause was brought to a hearing, and thereupon an interlocutory decree (p. 16 of Record) was entered in said cause, wherein it was decreed that the said defendant did not infringe the letters patant granted to Esek Bussey and Charles A. McLeod, No. 3,815, and as to such patent the bill should be dismissed.

It was also decreed that the letters patent granted to David H. Nation and Ezekiel C. Little, September 16th, 1873, No. 142,933 and No 142,934, were good and valid letters patent and that the defendant infringed the same. And that the complainant was entitled to an injunction enjoining the defendant from using the said patents. And by said decree it was referred to Newton Crane, Esq. a master *pro hac vice*, to take and state an account of the number of stoves made by the defendant containing the devices described and claimed in said Nation & Little patents, and the damages sustained by the complainants, and the profits made by the defendant by such use of the said patent.

Upon such reference the parties appeared before the master the complainants showed the number of stoves made by the said defendant since the first of January, 1875, and they introduced in evidence the contract. (p. 80, 81 and 82 Record) "Complainants Exhibit K." as the measure of damages sustained by complainants and of the profits made by the defendant.

Thereupon the said master made his report, (p. 18 Record) tnat the defendant had made two of such stoves and that the complainant was entitled to only nominal damages.

To this report of the master the complainant took exceptions, (p. 29 Record).—

And thereupon said exceptions were heard by the said Circuit Court, and a final decree entered in said cause (p. 30, Record) wherein —

It was decreed that the defendants did not infringe the Bussey & McLeod patent No. 3,815, nor the Nation patent No. 142,717, nor the Nation & Little patent, No. 142,932, and as to such patents the bill was dismissed.—

And it was further decreed, that, the letters patent granted to the said Nation & Little September 16th, 1873, and respectively numbered 142,933 and 142,934 were good and valid patents and that the defendant infringed the same. And that the complainant should have an injunction restraining the defendant, &c. from using the devices covered by said patents and that the damages of the said complainant were one cent. And that the complainants should pay five-sevenths and the defendant two-sevenths of the whole costs.

Thereupon the said defendant appealed from the said decree and gave a bond to suspend the issue of an injunction until such appeal could be heard.

And the complainant also appealed from said decree.

In consequence of this double appeal all the questions before the Court below are brought before this court.

In this case this Honorable Court and the parties labor under the disadvantage of not having the reasons of the Court below for its decisions in the record, as it was an oral opinion and no notes taken of any of them except what was said in overruling the exceptions to the master's report. (p. 35 Record).

The first question before the Court is in regard to the validity of the Bussey & McLeod patent Re-issue No. 3,815.

The only question in regard to the validity of this patent, in the court below by the pleadings and proofs and upon the hearing was whither it was anticipated by any of the patents introduced in evidence by the defendant.

2. Did the defendants infringe this patent of Bussey & McLeod, No. 3,815.

3. Are the two patents to Nation & Little dated September 16th, 1873, and No. 142,933 and 142,934 good and valid patents.

4. The defendant admits in its answer that it infringes these two patents.

5. As to the exceptions to the master's report, (p. 29 Record)

a. That the master erred in not finding that the license fee agreed to be paid by defendant as stipulated in the license granted by complainants, June 3rd, 1874 to defendant, and surrendered by defendant after paying one years royalty, was the true measure of damages for each of the 14,972 stoves, made by the defendant since the surrender of the said license by said defendant.

b. That the master erred in finding that the complainant did not show a license fee paid as royalty, for the use of said Nation & Little patents No. 142, 933 and No. 142,934, as a measure of damages for the stoves manufactured by the said defendant, and containing the invention described and claimed in said letters patent.

c. That the master erred in not finding that the defendant had made 14,972 stoves containing the inventions described and claimed in said Nation & Little patents No. 142,933 and No. 142,934, since the surrender of said license, or since the first day of January, 1875.

d. That the master erred in not finding the five hundred ($500) dollars paid by the defendant according to the terms of the license of June 3d, 1874, for one thousand stoves or less, was a license fee, and a proper measure of damages, for the stoves mnaufactured by the defendant, since the said first of January, 1874, to-wit: for 14,972 stoves.

e. That the master erred in not finding that the one dollar to be paid for each stove made under said license, was a proper measure of the complainants damages.

f. That the master erred in not finding the damages of the said complainant for the use of the said Nation & Little patents No. 142,933 and No. 142,934 was $14,972.

May it please your Honors.

The whole case, being thus before the court I can only commence at the begining and so follow through the entire case.

In taking the proofs in this cause, although the stove made by the defendants, and put in evidence, contained the improvements shown and claimed in the Nation and Little patents, numbered 142,717, 142,931, and 142,932, yet these patents were withdrawn from the case, upon the assurance of the defendant that they did not use such improvements in the stoves they now make, or had made since they terminated the license of 1874. The patent numbered 142,935, was also withdrawn. Consequently these patonts do not appear in the exhibits, nor enter into the argument.

The defendant admits, in its answer, the employment of the invention described and clamied in letters patent numbered 142,933, and 142,934, but deny their validity.

The defendant denys the use of the re-issue patent numbered 3,815, and also denys its validity.

Thus the issue in this case is whether the patants numbered 142,933, and 142,934 are valid, and whether the defendant uses the invention described and claimed in the re-issued patent numbered 3,815, and whether the same is valid.

The Complainants insist that the defendant admits the use of the re-issued patent numbered 3,815, when they admit the use of the patent numbered 142,934, and, in denying its validity, allege that said re-issued patent ante-dates it.

This is the case as it stands upon the pleadings

The proofs in the case show a very peculiar relation existing between all the parties to the patents and to the suit. The evidence of Mr. G. F. Filley shows, (int. 3. p. 106, record,) that he is the President of the Excelsior Manufacturing Company (the defendant,) and on pag 116 X int. 49, shows that the company consisted of himselt, Mr. James W. Bell, Mr. E. C. Little, and two sons of this affiant Charles H. Filley, and Frank Filley; and at the time the license was taken from Bussey and McLeod, that is consisted of himself, Mr. Little and Mr. Bell, (X int. 53) and in answer to the next question, he says that Mr. Little was the same person named in the Nation and Little patents. In answer X int. 53, "Did he, (Mr. Little,) have anything "to say about what patents you should purchase or take license under?" he said "No sir, he never was consulted." Mr. Bell was and is now the Secretary of the Company; Bell's evidence, int. 1, p. 116.

From this it will be seen that Messrs. G. F. Filley and James W. Bell effectually constituted the Excelsior Manufacturing Company, and the Company was but another name for G. F. Filley and James W. Bell, and that whatever they did or said in the business, was fully known to the Company, and that their admissions acts and doings in the premises must be considered as those of the Company.

Nation and Little, the patentees named in the patents numbered 142,933 and 142,934, are employed by the Company, the one as Superintendent, and the other as Pattern Maker; and it must be remembered that Little was one of the Company, as well.

The defendant had had a license from the complainants to use some one of their patents, but it does not appear exactly what that license was for, earlier than the date of the license which embraced the Nation and Little patents, introduced in evidence. See G. F. Filley's answer to X int, 5, 6, and 7, p. 112, Record. In answer to X int. 8, he says they took a subsequent license from the complainants; and when asked, (X 9,) "What patents were included in that license?" he said, "They were, I supposed, what was called the Bussey and McLeod patents, and the Nation and Little patents," and indentifies the license, offered in evidence, marked "Exhibit K" complainants' exhibits, as this subsequent license.

The negotciation that led to this license of 1874 was peculiar. In the spring of that year, Mr. Bell and Mr. Little visited Bussey & McLeod at Troy, New York, when that firm claimed that the stoves made by the Excelsior Manufacturing Company were an infringement upon their patent of July, 1866. Mr. Bell said that Mr. Little had a patent for the construction they were making, and suggested that Mr. McLeod should come to St. Louis and see if some arrangement could not be made with regard to the complainants' and to the Nation and Little patents. In consequence of this request, in June of that year, Mr. McLeod went to St. Louis, when Mr. Bell stated that they were willing to pay one royalty, if the matter of the Nation and Little patents could be so arranged that the one royalty the company were willing to pay would include all liability under both the Bussey and the Nation and Little patents; he suggested that the complainants should purchase the Nation and Little patents, when the company would take a license under all the patents, such an arrangement was so made by the complainants with Nation and Little, and a license executed, covering all the patents at issue, which license was accepted by the defendants,and the arbitrary royalty fee required therein paid for one year. See pp. 1, 2 and 3, McLeod's deposition, p. 48, record.

This license included the Nation and Little patents and the account of the transaction given by Mr. McLeod is the only reasonable one thas has been or can be given to show why these patents were embraced in this license. The defendants previously had a license to use the Bussey and McLeod patents, and if they esteemed the Nation and Little patents of no value, or of little or no validity, why did the defendant desire them included in this subsequent license? Why did they go to Troy, to bring those patents to the attention of Bussey & McLeod, and suggest their purchase as an inducement to the Excelsior Manufacturing Company to accept this subsequent license?

It does not appear that the company were required to pay any different license fee under this last subsequent license than under the previous one which embraced only the Bussey and McLeod patents, yet the defendant induced the complainants to purchase those Nation and Little patents as a condition precedent to the acceptance of the new license, by which the complainants might obtain pay for the use of the patents previously owned by them.

The foundation for this arrangement and purchase of these Nation and Little patents was laid at Troy, and when Mr. NcLeod went to St. Louis, he proceeded to perfect the bargain and obtained the title to the Nation and Little patents, after which Mr. Filley told him that he (Filley,) was the inventor of the improvements patented by Nation and Little: yet, notwithstanding this assertion on the part of Mr. Filley, we find him accepting the terms of this subsequent license, over his own signature, as president of the Excelsior Manufacturing Company, and paying the royalty fee for the first year?

It is true that the evidence on the part of the defendants is somewhat in conflict with the testimony of the complainants, but we submit that the latter is the only true theory of this transaction, and that if this evidence is to be believed, we insist that, in this suit, the defendants are estopped from manintaining that these Nation and Little patents are invalid. After having induced the complainants to make the purchase of these patents, equity and good conscience will not allow them to dispute their validity, and to refuse to pay for the use of patents which they acknowledge that they employ.

Other parties may take the advantage of the chance that their patents may be invalid, but it does not well become these defendants, after the complainants have incurred a liability on their representation, to say, that the complainants shall not derive any benefit from their purchase.

With reference to this purchase, license, and the influences which led to them, the deposition of Mr. Lape, on pp. 52 to 57, record; taken at St. Louis, will be found fully corroborative of the deposition of Mr. McLeod.

Re-statement and comparison of anticipating references offered by defendants.

In this cause the complainants, Esek Bussey and Charles A. McLeod, charge that the defendants, the Excelsior Manufacturing Company, of St. Louis, infringe certain Letter Patent of the United States, which they own, and these patents are for improvements in stoves, and they have hereinbefore been enumerated.

The complaints withdraw all claims under Letters Patent, numbered respectively 142,931 and 142,935, issued to Nation and Little, and recited in the complainants bill of complaint,

Defendants deny in their answer, that they "have made or vended to others to be used stoves embodying in their construction the improvements described and claimed in the re-issued patent, No. 3815, dated Feb. 1st, 1870, since January 1st, 1875.

The defendants admit that they have made stoves containing the devices claimed in the several claims of patents numbered respectively, 142,933, 142,934, both dated September 16th, 1873; and both these patents are owned by the complainants, and are named in their bill, and under them they seek to recover; but the defendants deny that the complainants have any exclusive rights under the patents named, as such.

Complainants introduce proof to show that the stove "Exhibit G," which the defendants admit they made before the commencement of this cause, and since the issue of all said Letters Patent, does contain the inventions described in the Bussey re-issue, No. 3,815.

See Hagan's testimony, pages 36 and 37, record.

This proof is not contradicted in their proofs; and the complainants introduce proof to show that the stove "Exhibit G," the defendants stove, does contain the inventions made the subject of claim in the Nation and Little patent, No. 142,932, and this the defendants do not contradict.

See Hagan's answer to interrogatories 5 and 6.

The defendants admit that they made the stove "Exhibit G," and also in their answer that they have also made stoves containing the devices set forth in the claims of patent, No. 142,934. Now if the drawing of the latter, appearing as figure 1 is placed by the side ot the drawing figures 1 and 4, of the Bussey re-issue, one of the complainants patents in suit, so far as heating the reservoir is concerned, they will be found to be identical. The only modification is the improved methed of forming the construction, by means of a detachable base pan, and the enlargement of the flue beneath the reservoir, which occurs in "Exhibit G," and in the Nation and Little patent.

The specification of the Bussey re-issued patent states as follows:

One part of my invention consists in arranging a culinary boiler or hot water reservoir in the rear of the oven of a diving flue cooking-stove, with such an exit flue extending down the front under the bottom and up the rear of the said reservoir substantially as hereinafter described and specified.

"It also consists in arranging a culinary boiler, or hot water reservoir in the rear of the oven of a diving flue cooking stove with an exit flue leading from some point in the rear of the vertical flue or flues below the top of the said oven and continuing under the bottom and up the rear side of said reservoir."

The first claim of the Bussey re-issue is as follows:

"A diving flue cooking-stove, with the exit flue so constructed as to enclose on the sides and bottom. the culinary boiler B."

This construction and arrangement of co-operating parts is found to exist in both, the stoves exhibit G, and that illustrated in patent 142,934, at figure 1 of the drawings of that patent, both which stoves the defendants admit to have made.

In the illustration, figure 1 of the complainants patent, 142,934, which is a vertical section of a diving flue cook stove, the exit flue J, by means of an arrow, shows the current of the flues enclosure of the reservoir sides as passing down to enter the opening B, and the flue D at the bottom of the culinary boiler F and rising at E to the exit, "thus enclosing it upon the sides and bottom." There can be no misunderstanding, this application of the construction of the first claim of the Bussey re-issue to the stove exhibit G, and that shown in the illustration figure 1 of patent 142,934, both of which the defendants admit they have made.

The second claim of the complainants Bussey re-issue patent in suit is for a sub-combination of the elements employed and those that relate to the heating of the bottom and rear of the reservoir without regard to the other side which is heated by contact; this claim is as follows:

"A diving flue cooking-stove with the exit flue constructed across the bottom and up the rear vertical side of the culinary boiler."

As the stove "exhibit G," and the drawings attached to the "patent 142 934," shown at figure 1, is examined, they will be found to be the same, and there is no difficulty in reaching the conclusion that both contain the elements made the subject of the second claim of the complainants, re-issue Bussey patent in suit For both are diving flue cook-stoves, both have the exit flue across the bottom and up the rear upright side of the culinary boiler, as before shown.

While this is true of the first and second claims of the Bussey re-issued patent in suit, when compared with "exhibit G," and the devices made the subject of claim in patent 142 934, which the defendants admit to have made, it is equally true as regards the third and fourth claims of the Bussey re-issue; the claims really covering the same co-operating parts in sub-combination.

Thus the question of infringement seems easily established as regards the Bussey patent in suit, and is admitted so far as the patent to Nation and Little, No. 142,933 and 142,934, also plead by the complainants is concerned

But the defendants deny that said Bussey was the original and first inventor of the improvements and invention claimed in said re-issue 3,815,and they allege who were the prior inventors ot the same, when, as a matter of fact, the interrogation arises in consequence of the allegation as a matter of issue.

Who was the original and first inventor of the subject matter of the Bussey re-issue? Esek Bussey the granter or the persons they name?

The defendants allege that William Davis and R. W. Lord, who became patentees from the U. S. upon improvements in cooking-stoves, November 23, 1829, which anticipate Bussey; and this patent the defendants introduce in evidence, marked "defendants exhibit No. 1." This Davis and Lord patent appears at p. 123, record, and the stove therein described and illustrated, is not a diving flue cook stove, and as Bussey's invention is descrbed and claimed, it could be applied to no other stove. The Davis and Lord stove does not enclose upon its sides and bottom the culinary boiler, as made the subject of the first claim of the Bussey re-issue, for the boiler is set in a chamber, with the exit flue in front of the boiler chamber, instead of behind it, and upon one of the vertical sides of the boiler, as made an imperative condition of the Bussey re-issue.

Neither has the Davis and Lord stove an exit flue constructed across the bottom and up the rear vertical side of the culinary boiler, as made a condition of the second claim of the Bussey re-issue patent in suit.

The Davis and Lord stove is not a diving flue stove having an uncased reservoir, two essential features to a stove containing the Bussey invention, as made the subject of the third claim of the re-issue 3,815. for the Davis and Lord boiler is incased and heated within a chamber formed by the casing.

The chamber encasing the reservoir in this Davis and Lord stove does not connect with the direct draught of the stove at all, and could not be heated when the damper E is open, for the reservoir chamber would be out of the current with the exit pipe above and between the fire and reservoir, an imperative condition of the fourth claim of the Bussey re-issue.

There is no resemblance whatever between the Bussey device, as shown in the re-issued patent in suit, and the Davis and Lord stove, a charitable suggestion as to why it appears as an anticipating reference hints that it strayed into the case as such by accident and not intentionally, it having not a single condition of function corresponding to the Bussey structure excepting in the general fact that they are both cook stoves.

The patent to J. Barron, for improvement in ships galleys and cooking-stoves, dated October 6, 1837, which appears at pages 124 and 125, record, as also name as anticipating Bussey.

It is marked exhibit No. 2.

This Barron device seems more remote and widely separated from Bussey's invention than even the Davis and Lord stove, and a very short examination will determine that it does not contain a single feature in common with the Bussey device.

The claim of the Barron patent is as follows:

"The manner of arranging the boilers in a ships galley or cooking stove so that one of their sides shall be directly exposed to the action of the fire, as described."

In Bussey's stove as made the subject of claim in the re-issue, it is a necessary condition to adopt the invention, that it shall be applied to a diving flue cook stove, from one of which flues an opening is made to connect with a flue beneath and up the rear side of the boiler, and this flue, and opening into it must be back of the oven and below its top. How Barron's stove with the boiler having one of its sides directly exposed to the fire, with exit pipe and flue K, over the fire could make an approach to these conditions is not at all clear.

The steam stove of Peter Getz, U. S. Patent 1,469, dated January 11, 1840, is also cited as an interfering anticipation of Bussey, it appears at page 125 and 126, record, marked "defendants exhibit, No. 3.

What could have prompted any fancied resemblance between this exhibit and the invention described in the Bussey re-issue, seeme difficult to determine, for the reference is a steam cooking-stove, where water is heated in a boiler A, figure 2, by passing the heat from the fire through the pipes B, to convert the water into steam, which is discharged from the pipe J, into the steam jacket G, (fig. 1) where boiler holes for the insertion of boilers are shown at I, I: the position of the boiler, fig. 2, is shown at fig. 1, by means of the projecting water faucet C; the exit flue is shown at F, as over the fire and the stove has not a diving flue in it.

The patent to P. P. Stewart, of January 18, 1859, No. 22,681, appearing at page 126 of record, is another alleged anticipating reference, "defendants exhibit No. 4."

This stove represents the old fashioned high reservoir stoves which were in use before "low down" Bussey reservoirs came into use. It is a diving flue stove and is just the stove that Bussey's construction was designed to improve.

The patent illustrating this stove does not anticipate the Bussey patent re-issue 3,815, for the following reasons.

The Stewart patent does not illustrate, "an exit flue constructed to enclose upon its bottom and sides of a culinary boiler" as made the subject of the first claim of the Bussey patent.

The reservoir C, shown at figures 1 and 3, opposite page 11 129 of record, will be found to have its base bottom placed upon the line of the stove top A, with the exit flue D, as passing up the flue through the reservoir, and not with one side of the reservoir placed against the end wall of the stove; and the top of the reservoir on a line with the top of the stove, with an opening in the flue, connecting with a flue beneath the reservoir and up its rear side. Bussey by his construction, heats both sides of his reservoir, one side by placing the reservoir in contact with the stove wall, and the other side by means of the ascending flue back of and against the reservoir. He utilizes the heat of the rear wall by placing his reservoir in contact with it, which Stewart loses, and has no flue passing up through the boiler, to interfere with dipping out its contents. Again he gets the reservoir low down, where it is more accessible.

These difference are clearly manifested when figures 1 and 3, of Stewart patent, page 129 of record, are compared with the illustrations figures 1 and 2, of the Bussey re-issue, page 59 of complainants book of exhibits.

The U. S. patent of Spaulding, dated June 19, 1866, original date, June 22, 1858, as appearing upon page 129 of record is cited as another older patent, containing the Bussey invention, it is marked "defendants exhibit No. 5."

It ss very clear that this patent of Spaulding's does not contain the Bussey invention although it is a low down raservoir stove, and the diving flues, and the reasons for this conclusion are as follows:

1. That the exit pipe and exit flue in the Spaulding patent, and as shown at I, figure 6, is placed between the reservoir or boiler E, and the oven B, (see figure 1.) Thus it does not contain the "exit flue so constructed as to enclose upon its sides the culinary boiler." This imperative arrangement is made the subject of the first claim of the Bussey re-issue. To thus enclose a reservoir upon its sides and bottom, Bussey places his reservoir against the plate W, taking the place of the stove wall: the reservoir thus placed

is heated upon one of its sides by the decending flue K, on the bottom by the flue E, and the upright flue at the back E, heats the other side. Spaulding heats a portion of the bottom and one side by the exit flue, but by having this exit flue in front of the boiler he cannot heat its rear vertical side.

2. That through a diving flue cooking-stove, it has no "exit flue constructed across the bottom, and up the rear upright side of the culinary boiler," as made the subject of the second claim of the Bussey, re-issue, for the reason before given, and the additional statement, that the spaulding stove has no exit flue up the rear upright side of the boiler, an essential function of the exit flue produced by the construction in the Bussey device.

3. That the Spaulding stove has no flue and flue opening beneath the boiler, combined with the exit flue up the rear upright side of the boiler, as made the subject of the third claim of the Bussey re-issue.

4. That the Spaulding stove has no flue back of the reservoir, so that the gasses of combustion shall be compelled to come in contact with and heat such reservoir when the direct draught is employed, and the gasses are passing to such exit, as made the subject of fourth claim of the Bussey re-issue. The Spaulding has its exit flue between the fire and the reservoir, and when the direct draught is employey and the diving flue not employed, the heat and gases of combustion reach the exit flue before reaching the reservoir, and hence leave the stove before coming in contact with the reservoir. While in the Busey re-issue whether the direct draught or revertable draught below the oven is employed, the heat and gases of combustion must come in direct contact with the reservoir, from the fact that the exit flue is underneath and back of

the reservoir, and the heat and gases have no means of escape.

Although the Spaulding stove may resemble the device made the subject of claim in the Bussey re-issue, in the heating of the reservoir, yet the functional arrangement of the co-operating parts is different and they operate in a different manner as before stated.

What should have led to the introduction of the Barlow exhibit, appearing upon page 137 of record, as an anticipating device, seems incomprehensible. The patent is an English patent, dated July 2, 1816, No. 4,044, and has not a single resembling feature in its construction and arrangement. it is marked "defendants exhibit No. 7."

This Barlow range has hot water boiler B. arranged along side of the chamber or grate, with the latter between the boiler and oven. This device has not a diving flue in it, or an exit flue back of the boiler, and without these elements, which are made imperative conditions of the Bussey re-issue, it cannot be taken into account as an anticipating construction.

The patent granted to Esek Bussey, one of the complainants, bearing date of issue one week earlier than the original of which the Bussey patent in suit is a re-issue, is also cited as an interfering and anticipating patent. This patent bears date July 17, 1866, and the original of the re-issue in suit July24, 1866, page 135 of record, "defendants exhibit No. 6." The patent to Bussey of July 16, is for the application of a reservoir coated upon its outer and inner faces with zincor an alloy of zinc to preserve the same from rusting when in use. The inventor states: "In carrying out my aforesaid improvements I shape and arrange a fire flue or fire place D, in respect to the fuel chamber E, a cooking plate F, an oven G, an exit passage H, and the water reservoir A, in any suitable manner, and so shape and arrange the said reservoir A, that it shall form any suitable part of the casing of the said fire flue or fire flues, and that the flame or hot gases and vapors of combustion shall circulate through the said fire flue or fire flues, and shall come in direct contact with the coated and alloyed outer surface O, of the reservoir, either in any suitable part, as indicated by the examples in figures 2, 5 and 7, or wholly as illustrated in figures 4 and 6.

What the subject matter of this patent can have to do with the re-issue in suit seems difficult to determine, for the latter does not allude to a coated reservoir; none of the illustrations meet the conditions of the re-issue: that shown at figure 7, being a vertical section of a stove in which the reservoir is placed in a casing, the latter forming a chamber around the reservoir, with an exit flue formed in the back of the chamber. This construction Bussey has disclaimed in the re-issue in suit, by limiting his invention to an uncased reservoir, their being a difference in the direction of the heated currents when discharged into a reservoir chamber which has an exit pipe on it at the back, and one where the exit is confined to, and compelled to pass under the bottom, and up the back by enclosure. That this illustration, shown in figure 7, is an uncased reservoir is easily determined by the enlargement made at C, to form the exit H; were this exit carried underneath and up the back as a flue intact, it would appear without the enlargement made at C, and as shown at figure 4 of the Bussey re-issue.

Thus it appears very clear that none of the referenses named by the defendants, in their answer, and produce therein, as exhibits, show a state of the art anticipating the inventions made the subject of the re-issue patent to Bussey: and while very few of these references named by the defendsnts in their answer, have any resemblance to the Bussey patent in suit, those that are diving flue cook stoves are so constructed that they could not preform, as arranged, the function of heating the reservoir when the direct draught was employed, from the fact that the exit flue was arranged between the reservoir and the fire, and not back of the reservoir, with the reservoir between the fire and the exit.

The defendants allege in their answer that David H. Nation and Esekiel C. Little are not the original and first inventors of patent No. 142,934, dated Sept. 16, 1873, it being introduced as complainants exhibit E, as one of the patents in suit. The defendants further allege that the inventions described in said patent have been patented by others, and they name as such, a patent granted to W. N. Moore, November 16, 1869, No. 96,826, marked "defendants exhibit No 11," page 153 of record.

The Nation and Little patent in suit No 142,934, and which the said patent of Moore is introduced to anticipate, contains the following:

"The nature of our invention consists in the construction and arrangement of a cooking-stove with a portable base pan or flue shell, and the means for attaching the same, as will hereafter more fully appear."

The following description of the base pan or flue shell, and its attachment, occurs in sequence to the foregoing:

"The base pan D, is made separate from the stove and provided on each side with a hook projection A, to be fastened on a pin B, projecting from the side of the stove. By this means the base pan can readily be attached and detached, and when attached, it fits the upper end, and forms the top of the warming closet, G. N. N."

"The novelty of this invention consists in the portability of the reservoir base pan D, and the warming closet attachment, whereby we economise space in shipment, and whereby repairs can be made at a small cost, and by unskilled workmen, as all the attachments will be shipped separately from the body of the stove, and mounted after they reach their destination."

Now the patent to Moore is claimed by the defendants to contain the same invention as that made the subject of this patent to **Nation** and Little.

The patent to Moore contains the following:

"The nature of my invention consists in the extension of the top of a cooking-stove behind the smoke pipe or escape flue:" and at page 154 of record, (figure 7,) is an illustration of the top plate extension—and it is shown as arranged behind the exit flue K. This construction does not meet the conditions of that claimed by Nation and Little, for it is a necessary part of their invention, thut the base pan or flue shell D, shall be attached to the back plate near the center by means of hooks A, A, cast upon the base pan, and pins B, B, on the stove body. Not one word of description or atom of illustration shows that the base pan or flue shell is detachable, or held in place by pins or hooks, in the Moore patent under consideration. Neither is it shown as attached near the center of the back plate, but on the contrary, the seat upon which the Moore reservoir must rest is parallel to and in the same plane as the rest of the top. Thus it does not meet the conditions of the first claim of the Nation and Little patent.

It does not meet the conditions necessary to come within the scope of of the second claim of the patent in suit, for the reservoir in the Moore patent is not shown to be a portable reservoir, having a flue on its rear side, combined with a portable base pan or flue shell, the reservoir not being shown at all; and the exit flue is shown as formed separately.

The Moore patent does not include the damper H. or a portable base pan or flue shell, two of the elements forming the co-operating combination made the subject of the third claim of the Nation and Little patent under consideration, a fair summary of this examination forces the conclusion that the Moore patent contains no elements anticipating the invention claimed in the Nation and Little patent named.

The patent to Spaulding of June 19, 1866, appearing as "exhibit No. 5, defendants," snd at page 129 of record, which was assumed to anticipate the Bussey re-issue, 3,815, is also assumed to anticipate the complainants patent to Nation and Little 142,934, and the same one that has been considered in the same respect aa to the Moore patent.

This patent was so throughly examined in relation to the Bussey re-issue, that a detailed examination need not be repeated; and it will be found to be no more of an anticipation of Nation and Little, than it was of Bussey's re-issue, 3,815.

Nothing is said or shown in the Spaulding re-issue named, concerning the base pan or flue shell being portable, on the contrary, at figure one of the Spaulding re-issue, the foot legs which support the stove are attached to the flue beneath the reservoir; conclusively, the reservoir flue seat could not be detachable without letting the stove down.

Nothing is said or shown in the Spaulding patent of a portable base pan or flue shell and a manner of attaching the same by means of hooks upon the pan and pins upon the stove body, as made the subject of the first claim of the Nation and Little patent, 142,934.

Neither has the Spaulding stove a portable reservoir with a flue in the rear side in combination with a portable base pan or flue shell, as made a condition of the second claim of the Nation and Little patent, 142,934, on the contrary the exit flue of the Spaulding stove is formed on the stove instead of on the reservoir, and it is in front of it and not at the rear.

Again, in the Spaulding stove there is no damper H, combined with a portable base pan or flue shell, as described in the Nation and Little patent under consideration. The damper H, in the latter, being over the oven, and the only damper in the Spaulding stove, is the one shown at L, (fig. 6, page 135 of record,) being below the reservoir, as made a condition of the third claim of the Nation and Little patent, 142,934.

To anticipate the Nation and Little patent, 142,934, the defendants also introduce the patents to J. R. Hyde granted June 10, 1862, No. 35,564, which appears in " defendants exhibit No. 13," also patent to James R Hyde, dated March 24, 1863, No. 37,966, marded "defendants exhibit No. 14," and these appear in the record from page 155 to 157.

Neither of the patents to Hyde describe or illustrate a detachable base pan or flue shell, neither of them have a portable reservoir with a flue arranged in the rear side of the same, and as these are essential elements to the first, second and third claim of the Nation and

Little patent, 142,934, they cannot with reason be assumed to anticipate it. The exit flue in both the Hyde stoves being formed in the stove, and when the reservoir is attached to the Hyde stove, the exit flue is in front of it and a part of the stove, and not at the back of the reservoir, and a part of the latter and formed in its side.

The patent granted to Joel Tiffany, August 19, 1869, No. 93,771, designated as "defendants exhibit No. 9," and appearing at page 145 of record, is also introduced to anticipate the Nation and Little patent, 142,934. This patent to Tiffany has no detachable base pan or flue shell, the space surrounding the tank and at its bottom, and between it and the warming closet is formed by the tank bottom and warming closet top connected by means of the casing which surrounds the tank. The reservoir or tank as shown at figure 1, is described as "being surrounded by dead air space " The specification also contains the following; the warming closet and tank are separated from each other by a chamber for the heated products of combustion connecting with a pipe passing up through the warming closet, this pipe is shown at F, (fig. 1.) Now the flue between the reservoir and warming closet is not claimed as a part of the invention in the Nation and Little patent, 142,934, even If it were it would be a different construction from that in the Tiffany stove, the latter having a chamber surrounding the reservoir or tank upon its sides and bottom, and receiving the heated products of combustion from a pipe passing up through the warming closet, and the Nation and Little device under consideration being a sheet flue beneath the tank, connecting with the diving flues, through the back plate of the stove about midway between the top and bottom. To assume that the space, A, A', in the Tiffany patent, between the tank and warming closet, is any equivalent for the detachable base pan or flue shell, of the Nation and Little device seems contrary to good judgement. Because Tiffany states in a seemingly prophetic sense that "the tank and closet may be attached to the stove" in many ways; it does not hint that a detachable base pan formed any element of his invention, neither does it follow because he states that lugs or hooks may either "be cast on the back of the stove with corresponding eyes in the side of the case surrounding the tank or on top of the closet," that he had in view the means employed by Nation and Little, who put no eyes upon the back or tank or upon the base pan, but connect wholly with the side of the stove, merely usihg the stove back as an engaging face for the hinging base pan, when swung down to contact after having been hooked into the hinging pins upon the stove sides, by means of the hooks formed upon the snspending sides, of the base pan. It is respectfully submitted that the Tiffany patent does not cantain the invention made the subject of the first, second and third claims of the Nation and Little patent, 142,934, for the reasons given.

The patent to Caleb Slade, granted Nov. 11, 1837, No. 457, appearing in exhibit 'Defendants' No. 15,' and at page 158 of record, is also introduced to anticipate the patent to Nation & Little, 142,934.

This patent is for a cooking stove having detachable platforms at the side, with sinks formed in the platforms into which the heat may pass to heat the tanks placed over the sinks formed in the platforms. "These platforms are attached to the stove by means of a projection from the side plates near the edge with an opening in the fire wall opposite the platforms."

They are made detachable from the side of the stove nearest the fire which they join, but not by the same mechanical means as is made the special subject of claim in the Nation & Little patent, 145,934. The base-pan or flue-shell of the latter hooks into pins upon the jams or sides, and not upon the back where the pan is, when attached; Slade forms a lip and socket, and these connect in the same side of the stove to which the platforms are attached.

It is a condition of the first claim of the Nation & Little patent, 142,934, that the base-pan or flue shell shall not only be attached by mechanical means specified but also that it shall attach at a particular location with which its application is combined. The claim reading "The detachable base-pan or flue shell D, attached to the body at a point near the center of the back plate of the stove by means of hooks a, a, cast upon the base pan, and pins b, b, on the stove body." These features as made the subject of claim, it is submitted, that the Slade patent does not contain, as the Slade device has not a "portable reservoir with a flue E, in the rear side," it cannot contain the invention as described in the second claim of the Nation & Little, patent, 142,934 and not being a three flue stove, the Slade device cannot contain the subject matter of the third claim of the Nation & Little patent under consideration.

The patent to Bussey, Feb. 1, 1870, re-issue 3815, and one of the complainants' patents in suit, appearing in the record at page 60, is also cited as containing the invention described and illustrated in the Nation & Little patent, 142,934. This patent has been before explained fully as to what it comprehends.

Defendants admit, in their verified answer, that they have made stoves containing the devices described and claimed in the Nation & Little patent; but they deny that those gentlemen were the original and first inventors of the same: and among those whom they allege were original inventors, or who anticipate Nation & Little, in this respect, is Bussey, in the inventions described in re-issue, 3815, one of the patents owned by the complainants, and made a part of their bill.

The complainants admit that the answer of the defendants in this respect, duly verified, is true, and to this extent, that the said Nation & Little stoves, as desscribed in the patent, 142,934, do contain the inventions described in the Bussey re-issue, 3815, but they do not admit that the mechanically improved means employed by Nation and Little is a part of the Bussey patent, re-issue 3815.

This Bussey re-issue does not provide any means by description or illustration, for a detachable base pan or flue shell, nor a portable reservoir with the exit flue made on it, as a part of it, and which when the reservoir is taken off, the exit pipe is taken off with it.

But the Nation & Little device does contain the flue beneath the reservoir, and up the rear side, just what Bussey claims in his re-issue, and just what he illustrates therein.

Now Nation & Little claim nothing but the improved means of applying the invention originally made bp Bussey; no claim is made by them to the flue beneath the reservoir; and it is shown only in connection with the reservoir, where it is formed with it.

As an improved manner of applying the Bussey invention, by means of detachable base pan or flue shell, peculiarly attached, the Nation & Little patent is good and valid. It was not necessary that Nation & Little should disclaim the Bussey arrangement of flues, so long as they connectedly state the nature of of their invention, and only claim what was new, as an improvment All improvements on stoves, wagons or machines, require the illustration af the device to which the improvement is fairly stated, the inventor need not disclaim the parts which he improves but does not claim.

It is respectfully submitted, in this connection. that Bussey was the original inventor of the fiue system for heating a reservoir, as appearing in the Nation & Little patent, and as described and claimed by Bussey in re-issue, 3815, one of the complainants' patents in suit, and that Nation & Little's patent is original so far as the improved manner of applying the Bussey invention, by means of a detachable base pan or flue shell is concerned, and this is subordinate to the former; that Nation & Little's improvement cannot be applied without using the Bussey invention, but that Bussey's invention as shown in re-iscue 3815, could be used without the Nation & Little improvement

It is further respectfully submitted, that when the defendants admit in their answer, (see fourth paragraph of defendants answer, page 10, of the record,) that they have made stoves containing the devices shown and claimed in the Nation and Little patent, 142,934, and then also state in their verified answer, that these stoves so made by them do contain the same invention as that shown and described in the Bussey re-issue, 3,815, one of the complainants patents in suit, they cannot be understood to mean that the detachable base pan was anticipated by said re-issue, for no mention is made of such a construction in it, they must mean that the Bussey re-issue anticipates the Nation and Little patent only in the illustration of the flue system in conjunction with heating a reservoir, which is virtually the same in both constructions.

The defendants further allege in their answer, that Nation and Little were not the inventors of the device desribed in patent, 142,934, but that long anterior to their claimed invention of the same the invention was known to Giles F. Filley, of St. Louis, one of the defendants, and to one Frederick Haws, of the same place. Mr. Haws' appearance is seemingly an ornamental one, like many of the exhibits, as he fails to appear in the body; but Mr. Filley does appear, and as a claimant for the invention, dating his claim as inventor about the same time as do Nation and Little, so that the application of the term in the answer, "long anterior," is poetical in significance rather than real.

In this case, as will appear on reading the testimony of Mr. Filley, that like all others who are brought into court as infringers, he thinks the invention good for nothing, injurious to the stove, and follows the usual course of belittleing the value of what it is assumed he has unlawfully appropriated. All this is however met by the suggestion which intrudes itself, if it was such a worthless invention, and so deleterious to stoves. Why did he use it so long as it subsequently appears he did?

Who first invented the base pan or flue shell, as adjustable, and combined with locoation, as shown and claimed in the Nation and Little patent, No. 142,934, David H. Nation and Ezekiel O. Little, or Giles F. Filley?

Where a matter of invention is the subject of claim as between rival inventors, and they contradict each other as to time of conception, particulary if the dates approximate, it is some times difficult to tell which is the original.

Mr. Filley, however, in the case under consideration seems to have very clearly fixed the fact of the invention, in Nation and Little, of the subject matter at issue; and all his statements indicate that, at least Mr. Nation, one of the joint inventors, really suggested to him the famous "Filley sketch" so useful to the stove trade, and still so "good for nothing, and so deleterioue to the stove," when he becomes an infringer by use.

After stating, in answer to question 6, of his direct examination, how he came to have the Bussey stove, said it was "for the purpose of attaching the low reservoir to a stove we were making," and again, he says, same page, "I might say we were then just about completing a set of patterns, what we call a plain stove, with a low down reservoir, for which this was to be an attachment."

Says Mr. Filley, continuing, "I was dissatisfied with the arrangement, and concluded we would not use that construction. This was a matter of conversation between myself and our pattern makers, Mr. Nation and Mr. Little, and other parties in the pattern stop. It was a matter of conversation and examinadaily, for a month or more, and we concluded that we would not adopt the plan of the Busser reservoir. In conversation with Mr. Little, I told him, or prior to that time, I told him that we wanted a construction by which the fire would pass under the reservoir then to the side of it. This conversation happened several times. Now in this connection note what follows in Mr. Filley's testimony: Just on the completion of the patterns, (the plain stove without the reservoir,) that I have spoken about, I called Mr. Nation's attention to this thing again, and he made the remark, with a sketch, why not make a base pan this way? and put in flue strips so as to take the fire down one of these corners of the stove into the base pan and return back to the body of the stove? Says I. Mr. Nation, we don't want that; that is what Mr Chamberlin has made at Cincinnati: we don't want that: there the conversation ended

When Mr. Filley went home that night, after seeing Nation's base pan and sketch, he made the famous "Filley sketch," and "that night" he fixes in answer to interrogatory 12, as on the 18th of November.

When Mr Nation is asked at cross-question 37, "if Mr. Filley did not tell him that Chamberlain, of Cincinnati, already had made such a construction," and he (Nation) answered, "I don't remember that conversation at that time," then it was that Mr. Nation's memory was better than Mr. Filley's, as will appear from the facts in connection. The matter under discussion at that time was as Mr. Filley states, "for the purpose of attaching the low reservoir to a stove that we were making;" and again says Mr. Filley, "just on the completion of these patterns I have spoken about, I called Mr. Nation's attention to this thing again, and he made this remark with a sketch." Does it seem reasonable that Mr. Nation would have showed Mr. Filley a sketch of a high reservoir stove in this connection, when they wanted a low reservoir? well that is what Mr. Filley swears to when he drags in the Chamberlain stove, as connected with the sketch, and base pan which Mr. Nation showed him, for Chamberlain's stove (defendant's exhibit 19) is a high reservoir stove.

Here it would seem that memory and interest have become a little mixed, and that interest prompted the interpolation of the subject of a different interview and conversation to connect the Nation sketch with it, and hold it then, until Mr. Filley could go home to let his family got to hear Vandenhoff "to spend some money and get a little pleasure while he made an improvement that was worth something to the stove trade."

It seems to be a reasonable conclusion that Mr. Filley's memory is at fault about the time of the conversation concerning the Chamberlain stove, and that is must have happened on another occasion than the one in which Mr. Nation showed him the sketch, explaining to him how by means of a base pan he would heat a low down reservoir.

It will not do for these defendants to assert that Chamberlain made any other stove than the one shown at exhibit 49, and which had a low down reservoir. Had such a construction had any existence it would have been here as an exhibit to make up a part of those produced to anticipate Nation and Little.

While it is not intended to charge Mr. Filley with willfully preverting the facts, or as having any intention of doing wrong, yet such conditions do occur where wrong is done and they come up in the experience of all who have to analize the value of human evidence given amidst those treacherous surroundings "where interest pipes that willing memory may dance."

Why Mr. Nation did not tell Mr. Flley that he considered the sketch shown him as his (Nation's) invention is immaterial, for Mr. Filley made no claim to it when shown; subsequently when Mr. Filley did state he thought the matter worthy of a patent, then Mr. Nation did tell him that he had attended to that some time before. That Nation should have been reticent in the presence of Filley was reasonably proper; he did not show his sketch to Filley until he had shown it to Clow, and told Clow he claimed it. Clow signed his name to it almost two weeks after having seen it, dating it back to that time, the fore-part of November, the 8th.

Mr. Filley produces no date earlier than the 18th day of November, and the evening of the day upon which Nation showed him a sketch; all the efforts made either intentionally or accidentally to connect Chamberlain's stove with the sketch shown to Filley falls to the ground. "It was a sketch," says Mr. Filley, "and not sketches" Now the flue strip principles of the Chamberlain stove could not have been shown in a "single sketch, a verticle sketch, like exhibit L" and Chamberlain's high reservoir stove was just what Mr. Filley was designing to avoid by constructing a low down reservoir.

The first evidence appearing as to Filley's alleged invention is by his own testimony, dated Nov. 18, 1872; that of Nation's is some ten days earlier, and by Filley's own testimony he produced the sketch, "Filley's sketch," immediately after seeing a sketch made by Nation, and explained by him to Filley; assuming, however, that the "Filley sketch" was made by Filley as alleged, Nov. 18, 1872, does it contain the invention described in the Nation and Little patent, No. 142,934 ?

As appearing, the "Filley sketch" does not show a detachable base pan or flue shell attached to the back plate of the stove near its centre by means of hooks cast upon the base pan and pins on the stove body, as shown in the Nation and Little patent, 142,934. No hooks or other means are shown for attachment, and the means and manner constitute the invention claimed. Does Mr. Filley testity by what means it was to be applied? Not at all; no one word appears in his tesiimony to show that he contemplated the use of such means, Mr. Filley testifies, (answer to question 14,) “and I gave him instructions how that closet could be attached to the stove;” so long as that “how” is not made a part of Mr. Filley's testimony, and is not the same as that shown in the patent 142,934, how can Mr. Filley be said to have been the prior inventor of the subject matter of the patent named: and if the same was known to him “long anterior,” as stated in the answer, there is not one iota of proof establishing such an assertion. As the “Filley sketch” is under examination, and it relates to the subject matter of the other Nation and Little patents in suit, although answered as to its anticipating patent 142 934 we have concluded to apply its assumed anticipating effect to the complainants, Nation and Little patents in suit, No. 142,934 and 142,933.

That Mr. Filley did not mean to construct a reversible boiler when he made the “Filley sketch,” is clearly evident from the narrow measure of flue room arranged beneath it in the illustration, and the flaring bevelled side shown the boiler, opposite to the side upon which the exit pipe is placed. This flaring or bevelled side would prevent the reservoir from joining the stove wall except by contact at the top with the edge, and would crowd the boiler so far back, when reversed, that the exit pipe in the rear would be cut off at the bottom with the top of the warming closet, so as not to connect with the flue beneath it, and, in consequence, be inoperative. That these two important features of construction, essential to the use of a reversible boiler or reservoir, if contemplated, should be omitted in the illustration, seems improbable in the highest degree. The Filley sketch seems PURPOSELY arranged to avoid such a condition. This sketch, as it appears, contradicts VERY EMPHATICALLY the assertion of Mr. Filley that the reservoir it illustrates was a reversible one. Admitting, for illustration, that, as shown, the Filley sketch showed a prior state of the art it would not anticipate Nation and Little, for it would be a different combination of boiler, bottom flue and exit pipe. With the boiler reversible, and it an older structure than Nation and Little's, it might anticipate their patents, 142,932 and 142,933, but not 142,934, for it does not illustrate the manner of attaching a detachable base pan, and its combination with a portable reservoir and exit at the rear.

There were some specifications prepared by Mr. Filley and abandoned. They are produced; nothing is read from them; nothing appears in them explaining a reversible boiler, or showing that Mr. Filley contemplated such a construction. This important feature, in fact, all there is of the Filley sketch, which would anticipate Nation & Little, were it older than their effort, rests upon the single statement of Mr. Filley, and that contradicted positively by the illustration he produces.

These deductions seem forced by the critical examination of the evidence presented by the defendants to support their allegation that Nation & Little have been anticipated by Giles F. Filley.

That Mr. Filley does not testify that he produced anything tangible in this direction until November 18th, 1872, and that was after Mr. Nation had produced a sketch and explained his manner of heating by means of a base pan, etc. That Nation produced good evidence that he had made a model over a week before this time, had made a sketch, had explained the same to Clow as early as the 8th of November, 1872, and Clow snstains him in this.

That Filley's sketch, as presented, does not contain the invention made the subject of the Nation &

Little patents in suit, and that the statement of Mr. Filley, from memory, that at the time the sketch was made he did contemplate making the boiler reversible, is contradicted by the condition of the illustration he produces to show what he did invent, and this seems to be so made as purposely to avoid illustrating a reversible boiler. That the sketch as produced and verified is better evidence as to what it was than the present recollections of Mr. Filley as to what it might have been, and that the sketch negatives the statement that it included, as a matter of invention, a reversible boiler, and without such a condition it does not anticipate the Nation & Little patents, in suit.

Assuming that the reservoir shown in the Filley sketch is illustrated as a reversible boiler, and assuming that the same was produced by him at a date prior to that established by Nation & Little, the "Filley sketch" would not include the specific means and manner made the subject of description and claim in the Nation & Little patent, 142,934, and could not be assumed to anticipate the latter.

We are led to ask, why did the defendants adopt and for a term of years continue to use the inventions of Bussey and of Nation & Little, especially when there are so many anticipating inventions of Bussey, as they allege, and the patents upon which have expired, so that no liability would have been incurred; and especially when the inventions of Nation & Little were good for nothing and deleterious to the stove?

Another of the patents assumed to anticipate the invention of Nation & Little, is the patent granted to one Wilkinson, as assignee of R. M. Hermance, bearing date April 26, 1870, and numbered 102,462; this appears as defendants' exhibit No. 8 and is shown upon page 140, et. seq. of record.

This patent illustrates, describes and claims a water reservoir, located in an extended stove top, as shown at figure 4, with the reservoir designated at H, and as inserted in a casing which surrounds it, as seen at figure 7, and with an opening into the bottom of the casing at Q, figures 1, 3, 5 and 9. Concerning the invention the specification states:

"The nature of my invention, as embodied in this application, consists, first, in a casing surrounding a water reservoir, when the reservoir is set in the top of the stove, and in the rear or at the back thereof. It further consists in casing the reservoir, when the same is placed above the top of the stove. It also consists in conducting the heat around the bottom and sides of such reservoir, placed at the back and in the top plate thereof in such manner that the same will circulate freely on all sides of said reservoir, &c."

How and in what manner this patent can be assumed to contain the features of the Nation & Little patent in suit is not well understood, for there is no base pan employed, and consequently the lugs upon the latter and the hooks upon the stove, the essential elements of the first claim of the Nation & Little patent in suit, could not be used in connection with it. For the reason that the reservoir is placed in an extended top, and suspended from it, in a chamber, which forms a casing around it for the heat to circulate, with the exit pipe formed to open from the casing or chamber. The portable reservoir and combined exit pipe of the Nation & Little patent could not be employed in such a construction.

While it is true that the illustrations shown in longitudinal vertical section at figures 1, 2, 3, 9 and 10 of the Hermance patent, without seeing the cross section shown at figure 8, which illustrates the casing, and also the view of the top, figure 4, in which the reservoir is suspended, might deceive a person as to a resemblance between this device and the Nation & Little invention under consideration comparatively, but when examined in connection and with the description in the specifications in view, all resemblance in the points at issue disappear.

The patent to Daniel E. Paris, dated April 11, 187, 113,556, defendants' exhibit 10, appearing on page 146 of the record, is nothing but a modification of the Spaulding patent, before described. with the exit flue arranged between the reservoir and the stove, and not having a flue across the bottom, and up the back, arranged by means of a detachable base pan, attached by hooks upon the latter, and lugs upon the stove sides, nor having a portable reservoir and combined vertical evit pipe. How it can be assumed that this patent anticipates that of Nation & Little, seems strange.

The patent to W. L. McDowell, dated May 16, 1871, numbered 114,838, appearing as defendants' exhibit, No. 11, upon page 171, of the record, is another one of these seeming 'tramp" patents that have crept into the case without pertinence or meaning.

This patent is for a boiler B, having a water foot *b'* projected from the boiler B, into the fire a", the foot being designated at E, and is perfectly foreign to all the purposes of this investigation. It does not illustrate, describe or claim a single element necessary to anticipate the Nation & Little patent at bar.

In addition to the foregoing reference and the assumed invention by Mr. Filley to anticipate the Nation & Little patents, the defendants, in their last amendment to the answer, name also the patent granted to J. H. & F. S. Mitchell dated December 21, 1869, and numbered 98,086, which appears as defendants' exhibit No. 16, on page 161, et. seq. of the record.

This reference seems also to have strayed into the case rather from accident than design, for it does not relate to a reservoir stove at all, and consequently does not embody the elements for attaching a reservoir, made the subject of claim in the Nation & Little patents. The whole purpose of this patent, named as an anticipation, being to describe and claim an extension of a boiler hole top af stove in its usuul plane, and a manner of heating it. As it explains itself so clearly no further description is deemed necessary.

The patent to W. J. Keep, dated December 12, 1871, and numbered 121,876, defendants' exhibit No. 17, is another reference appearing in their amended answer, aud assumed to anticipate the Nation & Little patents. This patent appears upon page 163, et. seq. of record. In this stove the reservoir is placed in an opening of the stove top, as shown at A, figure 1, and at figures 3 and 4; it will be seen that the reservoir is heated in a chamber that is made a fixed and incorporated part of the stove. Now when this invention is compared with that of Nation & Little, this impoatant difference is found, that the Nation & Little patents are for an improved method of attaching a detachable reservoir, and vertical flues combined, by means of a detachable base pan, with hooks formed upon the latter and lugs upon the stove wall, the base pan and the bottom of the reservoir forming a flue underneath the reservoir which connects with the upright flue formed at the back.

It does not appear that a reservoir which sits into a chamber through an opening in the stove top, with the chamber a fixed portion of the stove,, can approach the other, in the elements claimed, as an anticipation.

It is true that the Keep stove has a flue formed upon the back side of the reservoir, but Nation & Little do not claim such a construction broadly, but in combination with a detechable, portable base pan, and this the Keep stove does not have.

The re-issued patent to Phillips, dated Dec. 27, 1870. No. 4219, appearing as defendants' Exhibit, No. 17, upon page 170 of record, is another reforence, introduced for the same purpose as the others. This patent shows a circular flue pipe extended up through the reservoir, passing under a portion of the bottom and up through the center. It does not seem important that this exhibit should be explained or compared in connection with the Nation & Little patents, as the elements that type the lattor are not found in the Phillips device at all. The detachable base pan with reversible reservoir and exit flue as claimed by Nation & Little are wantingi

Another reference, named in their amended answer is the patent to Crowley and Chamberlain, dated February 7, 1871 numbered 111, 517, and appearing at page 173 of record, their exhibit No. 19.

This patent is for a method of extending the stove top in its usual plane, by means of "an extension pan or plate resting on the vertical plates of the stove body substantially as described," and this manner thus described in the specifications of this patent: a " shallow box or pan C, having laterally projecting flanges, L and N, around its upper edges, is also provided, as shown in figure 5, and placed against the under side of the extension of the top, as shown in figures 2 and 4." This construction is thus further described:—"This pan is supported by resting its flanges L on the upper edge of the stove body, and passing a screw, M, through its rear edge, or a lug thereon, into the top plate, as shown in figures 1 and 2." In other words this pan is placed under the extended stove top and screwed fast to it, while the flanges rest upon the upper edge of the stove body. That is one way of mounting the under portion of the stove top extension; but one single element of the Nation & Little means appear in this connection, and that is that the term pan, is applied to the under part of the stove extension, and this is screwed to the top plate, while the flanges rest upon the upper edge of the stove body. It surely is not a detachable base pan attached to the body at a point near the center of the back plate of the stove, by means of hooks, *a*, *a*, cast on the base pan, and pins, *b*, *b*, on the stove body, as made the subject of claim in the Nation and Little patents in suit, which this patent is introduced to anticipate.

After examining all this great array of exhibits set up as showing a prior state of the art as regards the Bussey re issue, 3815, and the inventions made the subject of claims of the Nation & Little patents, Nos. 142,933 and 142,934, one conclusion seems reasonable, and that is, that the right of honest priority belongs to the patents in suit, when they are thus comparatively examined with the exhibits.

There can be no doubt that the Nation & Little patents at bar are subordinate to 'that of Bussey, the re-issue, 3815, and it is equally true that both the Nation & Little patents show improved methods of constructing and arranging the parts to apply the Bussey invention in suit, and that these improved methods are sufficiently clear and distinct to be patentable. It is also clear that the claims of the Nation & Little patents are, within the rule, strictly for the improved means and method devised, and not for the scope of the elements employed. There can hardly be a doubt raised as to the patentable character of an invention which should improve the bearings or gears of a previously patented device.

Nation & Little enlarged the bottom reservoir flue by means of a base pan, and that is what they claim virtually in patent 143,932, and this was an improvement upon the Bussey invention. When they made the base pan detachable so that it could be easily taken off for transhipment and easily applied by means of hooks and lugs they made an another improvement, and when they combined with a portable reservoir, the upright exit flue, and detachable base pan, they made still another improvement, and these improvements are just what they claim and nothing more.

While the defendants assert through their witness Mr. Filley that the method employed by Nation & Little to attach their base pan, was an old and common means in use for years, why was not some device produced containing it? The best that the records of the patent office could produce was seemingly the device of Crowley and Chamberlain for extending, by lapping plates and a screw, the top plate of a stove. Why in this long procession of limping non-descripts, was not something produced something which would verify the parole evidence of Mr. Filley. The patent office with 17,000 stove models had been examined; with this method of attachment a common means of attachment in stove structure, these defendants would have found it, and produced in instead of the squinting far off methods of extending the plates of stoves which have been paraded and illustrated into the case.

It is alleged by the defendants in their answer that the subject matter of the Nation & Little patents in suit was invented bp one B. F. Clement in the summer of 1872, and before the date established by Nation & Little (It appears that the said B. F. Clement was then employed by Buck & Wright, of St. Louis; and to sustain the allegations of their answer the defendants examine B. F. the assumed inventor, J. F. Clement, his son, C. K. Pickels, a draughtsman, Chas. H. Buck, Lucius Brighton, tinman, and Bernard Grote; all of these witnesses testify as to the construction of a stove called the "Colorado" of which one was made, but not completed when first made; and of this stove and to the time of its production in part they are not positive. They however do some testifying in a co-partnership kind of manner as to how they are led to thimk it was made in August, 1872. B. F. Clement remembers that his son made the patterns for the "Fire King," and then the most of them remember it from this cause. But the "Buck drawing," which Mr. Pickel, the draughtsman, swears in an exact copy of the "Colorado," doee not contain the Nation & Little invention as described and made the subject of claim in suit, and this does clearly appear from the testimony offered by the defendants.

What Nation & Little patents are for need not be repeated; they are in general terms for forming a flue beneath a water reservoir by means of a detachable base pan, also for the mechanical means of construction employed to attach and detach the base pan, and for a portable reservoir and combined exit flue upon its side. Thus their claims are not broadly for a detachable base pan without regard to a manner or means ot making it so, for such a claim would be for a principal and not the application of it, and not a patentable claim. Manifestly the Buck drawing must show the same manner of forming a flue beneath the reservoir by means of a detachable base pan, made detachable by the same means, as that shown by Nation & Little to be the same invention and to anticipate it. Now it appears from the evidence of the defendant that the whole reservoir attachment shown in the Buck drawing, and in the Colorado from which it was taken, was bolted to the stove in the same manner that the rest of the stove was put together, and consequently could not be the same mechanical means that Nation & Little employ, which does not require a bolt or even a screw. The evidence upon this subject is as follows: Says Mr. J. F. Clement when asked, page 98 of record, int. 25, as to how the "Buck drawing" corresponds with the mode of attaching the base pan in the "Colorado," Seems to be exactly the same, the same way of attaching with a lug G, in the base going through; then the door frames were fastened on to the back with a lug, with a bolt through it, E, prime, and the base pan just set right in the top of the frame." Says C. R. Pickel, page 96 of record, int. 10, when asked as to how the base pan was attached on the "Colorado," "attached as shown in the drawing, it was bolted, bolts running through lugs shown in figure 4." Says Chas. H. Buck, page 102 of record, int. 13, speaking of the base pan and it being detachable: "Certainly it was this whole thing was put on with bolts." Again, says Mr. Buck, page 104, cross int. 4, that you could not use the stove with the reservoir taken off, that you can take off the reservoir because it is put on with bolts, and that it is fastened with as all the rest of stove is.

Upon an examination of the "Buck drawing" it is very plain that this reservoir was not detachable without dismounting that portion of the stove of which it formed a part, and the means employed to secure the base pan, were the usual bolts employed in stove mounting, that there was no means employed to attach a base pan as those shown and discussed in the Nation and Little patents, nor was it made detachable by any such means. Neither did the reservoir have combined with it, as a portable part of it, a vertical exit flue.

Because an interference was declared with Nation & Little when Clement applied for a patent. there is no proof that a model or drawing of the "Colorado" formed a part of Clement's application.

The proof that they brought out the "Brilliant," in 1873, and that it was not until sometime afterwards that their application for a patent was made (see page 89 of record, Int 58) and at that time Nation & Little had their stoves in use.

If, however, it be true that the "Colorado" did contain the invention made the subjects of the Nation & Little patents, how does the rule of law apply as to diligence?

As to the matter of joint invention of the devices claimed in the Nation & Little patents, which joinder is disputed by counsel for defendants, this point was not denied in their answer, and no evidence was taken upon it; consequently it is not a point in issue here, and cannot be raised under the statute. But as counsel for defendants has disputed the Nation & Little were joint inventors, we may be permitted to suggest that the issue of patents to them as joint inventors is prima facie evidence that they were the joint inventors.

In his cross-examination, cross-Int. 111, etc., page 68 of record, Mr. Nation says that he and Mr. Little talked the matter over; showing that they consulted together about the low down reservoir, and that they jointly determined how the attachment should be made to support the base pan and reservoir, and to give sufficient flue space to heat the reservoir; and the rules require that they shall swear that they believe themselves to be the "first, original and joint inventors," as a condition precedent to the issue of patents to them as joint inventors.

If there had been any doubt about their being joint inventors; if the defendants thought that Little was the sole inventor, why did they not call on Mr. Nation to testify to this? The counsel for defendants insists that there is something wrong in these joint patents, because the complainants did not call Mr. Little as a witness. This man is in the employment of the Defendants, who could easily have called him to prove, if such was the case, that he had no share in the inventions at bar.

The complainants allege in their bill, that Nation & Little were joint inventors, and the defendants did not deny the allegation in their answer. Hence they admit the fact, and are fairly barred from raising the point at this time; and we may as fairly assume that he was the joint inventor with Mr. Nation, because the defendants did not put him on the stand as a witness, as they may that he was not such joint inventor, because the complainants did not call him.

As to the claims of Filley and of Clement to being prior inventors to Nation & Little, these claims have already been fully discussed, to show that what Mr. Filley and Mr. Clement invented was not what Nation & Little invented. But assuming, for the sake of the argument, that such was the fact, that the invention of each was identical with that of the others, then Mr. Filley and Mr. Clement have no standing here as inventors. The evidence shows that they were independent inventors, attempting to produce like inventions, but Mr. Filley did nothing more than to make a sketch, which was not adopted by the defendants, of whom he is one.

In the diagrams, which face page 581 of record, figure 1 shows Mr. Filley's sketch, as he made it, showing a reservoir A, with exit B, resting upon a base pan F, which extends only partially under the reservoir, and the flue could not connect with the exit pipe at all if the reservoir was reversible, as is clearly shown in figure 3, for the flue formed beneath the reservoir by the base pan does not extend far enough to the rear to afford communication with the exit pipe; and the back of the reservoir being inclined, and not vertical, would leave an opening when reversed, as shown in shaded lines in figure 3, which would have rendered the device inoperative and valueless; Fig. 2 represents the Filley sketch as he would now have us believe he made it in 1872.

Again, assuming that all these inventions were identical, neither Filley or Clements have any standing here, for in the case of Cox vs. Griggs, 2 Fish. patent cases, 177, the court held that "preponderance of proof should be in favor of the plaintiff, but if they were jointly experimenting, and equally meritorious, a doubt should be solved in favor of him who first obtained a patent.

Now Nation & Little were the first to reduce to practice by the production of their drawings, the making of their models, and obtaining their patents; hence they are impregnable so far as Filley or Clements are concerned.

In view of the evidence, and the facts of the case as shown in the preceding pages of this brief, we submit,

1. That the Bussey reissue patent, 3815, is valid.

2. That the defendants admit its infringement in their answer.

3. That nothing in the anticipating references

cited and examined can be found anticipating the first, second, third and fourth claims of said reissoed patent.

4. That the Nation & Little patent, 142,933 and 142,934 are valid.

5. That defendants admit their infringement in their answer.

6. That the references cited by the defendants as anticipating the inventions described in the Nation & Little patents are not such as would anticipate their inventions.

As to the meesure of damages:

The complainants, in the court below, before the master, put in evidence to prove their damages, a former contract with the defendants, (p. 80, 81 and 82 record). This contract or license empowered the defendants to manufacture, at St. Louis, stoves under the following patents, No. 5,435, No. 99,529, No. 111,811, No. 142,934, 142,933, No. 142,717, No. 142,932, No. 142,931, No. 142, 935.

This contract contained the following clause, viz:

"3. The parties of the second part covenant to pay to said parties of the first part, or their assigns, upon the first day of January of each year, a license fee of one dollar upon every other cooking stove sold by said parties of the second part, during the preceding twelve months ending December 31st, containing wholly or partly said patented improvements, provided that if said fee be paid upon the days provided herein for annual returns, or within ten days thereafter, a discount of fifty per cent. shall be made from said fee for prompt payment."

This contract also contained a proviso that if the license fee was not paid the licensors might cancel it.

And it contained also a clause that if the licensees desired to cancel the agreement, it could do so by paying the license fee on all stoves they may have made under said license, up to the date ot said cancellalion.

This contract was dated the third day of June, 1874.

On the 19th day of March, 1875, the defendant sent the following letter to the complainants, (p. 23, record,):

Messrs. Bussey & McLeod,

Dear Sirs:

Yours of the 9th came duly to hand. We disavow of any intention of doing a wrong or doing a mean act, but we propose to do what is right under all and any circumstances.

You will please bear in mind that your patent, or your alleged patents, are undergoing a test in the courts, which may determine whether or not you have any vested rights in them; but until these questions are settled, you cannot complain if parties take exception to your demand for royalties. Upon that is a doubttul issue. In order, however, not even to seem to act towards you unfairly, we send you a draft for $500, which is a greater amount than the royalty on the stoves we have sold would be, but by so doing we do not admit that you have any legal title under your alleged patents, as we before stated. In the future we will consider your license of the 3d of June, 1874, as revoked.

Respectfully yours,

G. F. Filley, *President.*

By this last clause of this letter, *In the future we will consider your license of the 3d of June, 1874, as revoked*, the defendant exercised the power given to it by the clause of the contract, allow it to *cancel* the license at any time by paying up the license fee on all the stoves made up to that time. Whether the license fee was paid on all the stoves made under the license is a question it alone can answer. The letter says that it was more than the royalty on the stoves sold.

If this license had run for ten years, and then been cancelled by the defendants, is there any doubt but what it would have been considered as a good measure of damages. If the licensee had continued to manufacture such stoves, and been sued for such infringement.

If the defendants had said we will not pay the license fee under this license, the complainant could have maintained a suit against it on the contract, and it could not attack the validity of the patents. Kinsman vs. Parklinset, 18 How., 289. But at the end of the first year, or rather at the time they were to render the first account of stoves made under this license, they concluded that they would pay the license fee for that time and cancel the license.

Can it be said that the length of time that a license runs, renders it any more a measure of damages than it was at first. When the license is given and accepted is the time when the value of the use of the invention is determined, not at its expiration.

There is another light in which this particular license should be viewed, and that is that it is the contract of the defendant. It was entered into after mature deliberations and after considerable opposition from some members of the corporation

Mr. Filley testifies (p. 118 record, int. 15). This question of license came up between Mr. Bell and myself. I was opposed to the taking of any license. Mr. Bell, I would say, has the management of our store department:—the store; I take the outside business and the foundry. I was opposed to accepting any license whatever, and contesting this matter as to priority of invention. Mr. Bell was of a different opinion. He says, "We had better make some compromise and take a light license, rather than have any trouble or litigation, under the present condition of things at the store."

Can there be any doubt but what its terms were closely considered and duly weighed. In this license the fee was fixed at one dollar, if the licensee made and sold stoves containing *wholly or partly* said patented improvements, provided there should be a discount of fifty per cent. of such amount for prompt payment.

If this contract or license had been between the complainants and a third party, the defendants might, perhaps, say that as this was a license to use a good many patents, it could form no criterion whereby to judge of the value of their use of the two. But the defendant entered in this contract agreeing to pay for the use of these patents,, if it used them wholly or partly, That is, it agreed to pay as much if it used one as if it used all of them. The defendant expected and intended to make more profit out of these patents than the license fee, and it also intended to make more if it used only one of them. Therefore it is not right or equitable to allow it to say, that this is a repudiated contract and therefore not a fair measure of damages.

This contract or license was binding on each and both parties while it was in force, but it was cancelled by the defendants, not because it did not consider the use of the patents of Nation & Little as valuable as it had been a year before, but because as Mr. Filley claimed he was the inventor of the device therein claimed. Now we do not claim that the defendants are technically bound by this contract or license, but that they are equilable estopped from saying it is not a true and just measure of our damages after they have taken and used our property.

Now in this license both parties foresaw that the licensee might not use but one of these patents, and therefore it was agreed that the same license fee should be paid if only one was used or all. There was no deception about it. Mr. Bell, page 122 record, int. 18, says we did not use the Bussey & McLeod patent, (the one in suit) int. 19. "Then if you didn't use Bussey & McLeod's patent, you must have taken a license for the purpose of using the Natien & Little patents,' did you not.

The defendants took this license covering several patents, because they related more or less to the stove they wanted to make, and for the purpose of preventing any one from making a demand upon them for some of these patents which they might use as part of some other one, and they did not intend to use them all, but they agreed to pay one dollar royalty for such of them as they did use. This agreement to pay this royalty was coupled with the proviso that they should be intitled to a discount of fifty per cent for prompt payment, which would reduce the royalty to fifty cents for each stove. They made this payment for one year, at a rate of fifty cents for each stove, saying this would exceed the amount of stoves sold, but in accounting before the master they showed that they had made over eleven hundred, and the contract was that they should pay for all they made. Then the defendant cancelled the agreement and in using the patents on which they had paid the royalty and now say that because they have done wrong and unlawfully taken our property, we should not use this license as the measure of our damages. That if this was allowed it would be putting us in the same condition in which we would have been if this contract had remained in force. That is, they ask that they may take advantage of ther own wrong, which is cantrary to the fundamental maxium of law and equity, that that no one shall take advantage of his own wrong.

As to the revised patent of Bussey & McLeod, the only defense made by the defendant in the pleadings and proofs was that the defendant did not use it, and that it was anticipated.

The only evidence in the case as to the use of the Bussey & McLeod reissue, No. 3815, is that of Dr. Wm. E. Hagan, of Troy, N. Y., who finds that the first, second, third and fourth claims, as said patent are found in the defendants stove. Compts. Ex., C. (p. 36 record.)

Mr. Filley said that they did not use the Bussey patent, bnt that was the Bussey patent included in the license, No. 5435, which was for a differently constructed stove and reservoir.

The defendants have introduced in evidence the patents of Davis & Lord, dated Nov. 25th, 1829, Defts. Ex. No. 1. James Barron, dated Nov. 6, 1837; Defts. Ex. No. 2. Peter Gaetz, dated Jan. 11, 1840; Defts. Ex. No. 3. P. P. Jtewart, dated Jan. 18, 1859; Defts. Ex No. 4. Daniel E. Paris, assignee of S. B. Spaulding, dated June 19, 1866; reissue of a patent granted to said Spaulding Juue 22, 1858. Esek Bassey, dated July 17, 1866; No. 56,488; Defts. Ex. No. 6. English patent to Joel Barlow, July 2, 1816; Defts. Ex. No. 7.

None of these patents show anything approaching the construction described and claimed in the first four claims of the Bussey & McLeod reissue, No. 3815, except that Mr. Bussey himself, in his patent No. 56,488 for a reservoir of cast iron coated with zinc, shows a section of a stove which is similar in construction with the section shown in the patent in suit, reissue No. 3815, the original of which was dated only one week later. Now it is a question whether this drawing alone by itself is sufficient to anticipate the later patent. There is no description of the construction of this form of flue in the specification, and is only referred to as one way of using the zinc coated boiler. The law requires such a description of the drawing as to enable one skilled in the art to construct the machine. Can a machine or a stove be constructed from only a sectional drawing without any further description?

Another question comes up. Is an inventor prevented from claiming in a subsequent patent taken out a week later a device which he has shown in his first patent? If such is the law then, Bussey would be precluded from claiming in the patent of July 24, 1866, what he had shown in the patent of July 17, 1866, provided it is adjudged to be the same thing. If he may claim in this later patent what he has shown in the prior patent, but not claimed, then the prior patent cannot be held to anticipate the one issued only a week later.

Therefore we submit may it please your honors:

That the patents of David Nation and Ezekiel C. Little, dated September 16, 1873, numbered 142,933 and 142,934 respectively, are not anticipated by any of the patents put in evidence by the defendant

That the defendants admit in their answer that they use the devices described and claimed in the said two Nation & Little patents, No. 142,933, and No. 142,934.

That the license fee agreed to by the defendants in the license of June 3d, 1874, was the proper measure of the damages of the complainants, or of the profits made by the defendants by the use of said patents.

That the Bussey and McLeod re-issued patent, No. 3 815 are not anticipated by any of the patents introduced in evidence by the defendant,

That if the patent of Esek Bussey, dated July 17, 1866, No. 56.488 shows, and sufficiently describes the invention described and claimed in the re-issue No. 3,815, the original of which was dated July 24, 1866, and granted to the same inventor, to anticipate it; that the said Esek Bussey is not by law, prohibited to claim the same invention in this second patent issued only one week latter.

That the uncontradicted evidence of the complainants shows that the defendants use the first, second, third and fourth claims of this patent.

Therefore the complainants ask that the decree of the court below, so far as it decrees that the patents of David H. Nation and Ezekiel C. Little, dated September 16, 1873, and numbered respectively, No 142,933, and No. 142,934, and that the defendants infringe the same, be confirmed in all respects. And that all that part of the decree which finds that the re-issued patent to Esek Bussey and Charles A. McLeod, dated February 1, 1870, No 3,815, was not infringed by the defendants. And also all that part of the decree confirming the masters report, and that part decreeing only nominal damages to the complainant be set aside, and that such further proceedings may be had in the case as to secure to the said complainants their rights in the case according to equity and good conscience.

CHARLES J. HUNT,

Solicitor and of Counsel for Bussey and McLeod.

110-131

Supreme Court of the United States.

No. 180 and No. 181.

October Term, 1883.

ESEK BUSSEY and C. A. McLEOD,
Appellants,
vs.
EXCELSIOR MANUFACTURING COMPANY.

EXCELSIOR MANUFACTURING COMPANY,
Appellant,
vs.
ESEK BUSSEY AND C. A. McLEOD.

BRIEF FOR EXCELSIOR MNFG. CO.

S. A. DUNCAN,
Of Counsel.

Supreme Court of the United States.

E. BUSSEY and C. A. MCLEOD, *Appellants*, *vs.* EXCELSIOR MANUFACTURING COMPANY.	No. 180.
EXCELSIOR MANUFACTURING COMPANY, *Appellant*, *vs.* E. BUSSEY and C. A. MCLEOD.	No. 181.

Brief for Excelsior Manufacturing Company.

Statement of the Case

This is a suit in equity appealed from the U. S. Circuit Court for the Eastern District of Missouri, Esek Bussey and Charles A. McLeod complainants, and the Excelsior Manufacturing Company defendant.

The bill was brought for the alleged infringement of seven several letters patent relating to cooking stoves, of name, number and date as follows :

Esek Bussey, No. 56,525, July 24, 1866 ; re-issued Sept. 28, 1869; and again February 1, 1870, as No. 3,815.
D. H. Nation, No. 142,717, Sept. 9, 1873.
D. H. Nation and E. C. Little, No. 142,931, Sept. 16, 1873.
" " " " 142,932, "
" " " " 142,933, "
" " " " 142,934, "
" " " " 142,935, "

The Bill contains a prayer for an injunction and for profits. *It does not ask for damages.*

The answer denies the validity of each and all of the patents, and contains proper averments of anticipating matters.

It also denies the assignments set up in the bill, whereby it is alleged that the complainants became the exclusive owners of the several patents.

It also denies that D. H. Nation and E. C. Little were the "first, original and joint inventors" of the several inventions patented to them, as alleged joint inventors, in patents Nos. 142,931 to 142,935 inclusive.

It denies that since January 1, 1875 (prior to which the question of infringement cannot arise, as defendant then held a license), the defendant has made, used or sold stoves embodying the inventions described and claimed in patents Nos. 3,815, 142,717, 142,931, 142,932 and 142,935.

It admits that defendant has made and sold stoves (whether more than two is not stated), embodying the devices set forth in the claims of patents Nos. 142,933 and 142,934, but denies that defendant has thereby infringed upon any exclusive right which complainants can in law or in equity possess by virtue of said patents.

Complainants before trial formally withdrew all claims under patents Nos. 142,931 and 142,935 (*Rec.*, p. 35 and 6), and offered no evidence as to infringement of No. 142,717.

The final decree of the Court (pp. 30-32,) adjudges that defendant does not infringe patents Nos. 3,815, 142,717 and 142,932, and as to these patents dismisses the bill.

It finds infringement of patents Nos. 142,933 and 142,934, holds the patents valid and adjudges complainants entitled to a perpetual injunction thereunder.

It also confirms the Master's report awarding complainants "the sum of one cent as *damages*;" and orders a division of the costs, five-sevenths to be paid by complainants and two-sevenths by the defendant.

From this decree defendant appealed generally (p. 32).

Complainants appealed from "so much of the decree as relates "to said complainant's re-issued patent No. 3,815, and its non-"infringement by said defendant; and also to that part of said "decree relating to the damages of said complainants, and to the "costs." (p. 33).

Complainants have filed in this Court an "Assignment of Errors" (p. 181), in substance as follows:

(1.) That the Court erred in holding the Bussey re-issued patent No. 3,815 to be invalid.

(2.) That the Court erred in holding that defendant did not infringe this patent.

(3.) Also, in overruling the exceptions taken to the Master's Report on the question of damages.

Upon this state of facts the questions presented for review, upon appeal, are:

1. As to the Bussey re-issue No. 3,815, whether it is a valid patent, and whether it is infringed by defendant.

2. As to the Nation and Little patents Nos. 142,933 and 142,934, whether they are valid patents, and whether they are owned by the complainants.

3. Whether the judgment for "the sum of one cent as damages" shall stand.

4. Whether the costs shall be apportioned as decreed by the Court below.

The Excelsior Manufacturing Co., defendant, contends as follows:

1. That the Bussey re-issue No. 3,815, under any legitimate interpretation of the claims, has not been infringed; and that, if so construed as to include defendant's construction, it cannot be held valid.

2. That neither of the Nation and Little patents Nos. 142,933 and 142,934 is valid; and that complainants have failed to prove their title as asserted in the bill.

3. That the judgment for damages, in the sum of one cent, should be set aside and the decree for an injunction be vacated, because of the invalidity of the said Nation and Little patents.

4. That complainants are not entitled to damages in any amount whatever, because, first, none have been proved, and, secondly, the bill does not ask for damages.

5. That complainants are not entitled to a decree for profits, since none have been proved.

6. That the bill should be dismissed as to all the patents, and the entire costs taxed against the complainants.

Bussey Re-issue, No. 3,815, Feb. 1, 1870.

The Court below, in view of the prior state of the art, construed the claims narrowly and found under such interpretation that the defendant does not infringe. This judgment should stand.

I.

Bussey's invention relates to a particular mode of constructing the exit flue of a cooking stove with reference to heating the contents of a water reservoir attached to the rear of the stove. A portion of the back plate of the stove having been removed, the front of the reservoir is set into the flue space thus exposed in rear of the oven; and the invention consists in forming a narrow exit flue leading out from the flue space of the stove, across the bottom of the reservoir and up the exterior face of the rear wall of the same. The bottom and the rear wall of the reservoir itself form the inner wall of the exit flue; so that if the reservoir were to be removed the other three walls of the flue would be left standing, but the whole interior of the flue would be exposed.

To protect the front of the reservoir from injury from the direct impingement upon it of the gases or flame in the flues of the stove, the patent provides that a thin plate, *w*, *may* be placed just in front of the reservoir, but this is not made an essential of the construction.

The invention is illustrated in connection with a "three-flue" stove, but manifestly the principle of the invention has no necessary relation to this special number of flues.

Defendants' stove is a three-flue stove, with a low down reservoir, and the gases in escaping pass under the bottom of the reservoir and up through a vertical pipe, but it differs in several important particulars from the Bussey construction.

First, the back plate of the stove is not cut away, so as to bring the products of combustion against the front of the reservoir, but on the contrary there is a dead air space between the rear wall of the stove and the front of the reservoir.

Secondly, instead of a narrow exit flue, carried across the middle of the bottom of the reservoir, as in Bussey, the escaping products of combustion on leaving the flue space of the stove are discharged into a chamber beneath the reservoir and co-extensive with the entire bottom of the reservoir.

Third, the vertical conduit leading out from this chamber does not pass up "along the rear, upright side of the reservoir," but is a pipe formed *in* and *passing through* the body of the reservoir. If the reservoir were to be removed, this pipe, as a part of it, would be removed also.

If the Bussey patent is limited to a construction in which the front of the reservoir is exposed to the action of the gases (either directly or through the medium of a thin shield plate of less thickness than the ordinary stove plate), or if it is limited to a construction in which the exit flue is of substantially the same width from the point where it connects with the stove to the pipe collar, or to a construction in which the vertical part of the exit flue is made to pass "up along the rear upright side of the reservoir," as distinguished from passing up through the reservoir and thus encroaching on the capacity of the reservoir, it is plain that defendants' stove does not infringe.

How the patent should be construed will best appear from an examination of earlier patented inventions.

(*a*.) In the Davis & Lord patent of 1829 (p. 123), the gases on their way to the escape pipe passed beneath and all around the water reservoir, not being confined to a narrow space at the bottom.

(*b*.) In the Getz patent of 1840 (p. 126), there is shown a low down reservoir or boiler, and the gases pass down under and through the lower part of it and up along the rear upright side, and thence over the top to the escape pipe placed at the front of the structure. The patent provides for an inch space beneath the bottom of the boiler and an inch at the back side for the passage of the gases. The construction is such that the gases do not rise around the two sides of the boiler.

(*c.*) In the Stewart patent of 1859 (p. 129), there is shown a very familiar structure. The water reservoir is placed at the rear of the stove, in an elevated position; the gases emerging from the middle flue of the stove enter a chamber under the reservoir and expand therein over the whole bottom of the reservoir; thence they escape through a branched pipe passing up through the body of the reservoir.

(*d.*) In the Spaulding patent of 1858 (re-issued in June, 1866,) (p. 135) there is shown a low-down reservoir placed at the rear of a three-flue stove. The middle flue is extended back under the bottom of the reservoir, and presumably without any increase in its area (p. 131). With the damper properly placed the gases will be made to traverse the bottom of the reservoir on their way to the exit pipe. Their final exit, however, is in front of the reservoir

(*e.*) In the Barlow patent of 1816 (p. 139) the path of the escaping gases is under the reservoir or boiler "horizontally along the whole length," and then, if required, up through "a section of the flue in the back part of the boiler."

(*f.*) The Bussey patent of 1865 (p. 180), re-issued in 1866, shows a three-flue stove, with a portion of the back plate cut away and the front of the water reservoir projected directly into the flue space thus exposed. The gases, however, do not pass across the bottom of the reservoir and up at the rear side.

(*g.*) The Bussey patent of July 17, 1866, (p. 137) shows a three-flue stove, with a reservoir at the rear, this reservoir being placed on a level with the top plate of the stove in some of the figures, and in others being of the "low-down" order. In Fig. 7, particularly, the gases, on merging from the middle flue, are shown as being conducted through an exit flue across the bottom of the reservoir and up the rear upright side thereof. The description of that figure, found on page 136 (Par. 3) plainly indicates that the gases in passing through the exit flue do not ascend and surround the reservoir on all sides, but only touch it *in parts;* in other words, that the reservoir does not set down into a hot-air chamber, but that the flue simply passes across the bottom and up at the rear, the reservoir thus completing the fourth wall of the exit flue, in like manner as is done in the structure shown in complainants' patent in suit.

It thus appears that prior to July 24, 1866, the date of the original of the Bussey re issue, all the various elements referred to in said patent were old and well known.

"Diving-flue" stoves with three flues were old. *Spaulding*, 1858; *Bussey*, 1865; *Bussey*, July 17, 1866.

"Low down reservoirs at rear of cooking-stoves and similar structures were old. *Spaulding*, 1858; *Bussey*, 1865; *Bussey*, July 17, 1866; *Barlow*, 1816; *Getz*, 1840.

Exit passages conveying the products of combustion under the bottom of the reservoir and leading thence to an escape pipe, were old. *Bussey*, July 17, 1866; *Davis & Lord*, 1829; *Getz*, 1840; *Stewart*, 1859; *Spaulding*, 1858; *Barlow*, 1816.

Considering the claims of the Bussey re-issue in the light of the prior state of the art, as thus exhibited, it will appear either that the claims are untenable, or that they must be so limited by construction as not to affect defendant's stove.

CLAIM 1 is as follows:

> "A diving-flue cooking stove with the exit flue so constructed as to enclose on the sides and bottom the culinary boiler or hot-water reservoir B."

(*a.*) The use of the plural "the sides" requires that the *front* of the reservoir as well as its rear be enclosed by the flue, and thus the claim has special reference to the fact that a portion of the back plate of the stove has been removed and the front of the reservoir set into the flue space thereby exposed. This would cause the gases while moving down the middle flue on the way to the horizontal part of the exit flue to come into contact with the front of the reservoir. Thus, and thus alone, can it properly be said that the exit flue "encloses" the reservoir "on *the sides*" as well as the bottom.

(*b*). If the claim does not require the gases in the exit flue to come in contact with the front of the reservoir, but only with the bottom and *one* of the sides, it is anticipated.

In *Gelz* of 1840, *supra*, the exit flue passed under the bottom and up the rear side of the reservoir. So, also, in *Barlow* of 1816; and so, notably, in *Bussey* of July 17, 1866 (Fig. 7).

In *Spaulding* of 1858 the bottom and one of the sides of the reservoir are enclosed. Moreover, it is a diving-flue stove.

Under this suggested construction, manifestly, the attempted limitation to a "diving-flue" stove is irrelevant. This is of moment only when the gases are to act on *the front* of the reservoir.

(*c*) In defendant's stove the products of combustion are not brought against the front of the reservoir, since the back plate of the stove is not cut away to receive the front of the reservoir into the flue space. On the contrary, there is an air space purposely left between the reservoir and the stove.

In no sense, therefore, can it be said that in this stove the exit flue "encloses" the reservoir "on *the sides*." The claim is not infringed.

CLAIM 2 is as follows:

> "A diving-flue cooking-stove with the exit flue constructed across the bottom and up the rear upright side of the boiler."

(*a*) This claim does not purport to be limited to a stove with a "low-down" reservoir or boiler. It is plain also that if the stated combination of boiler and exit flue is old in the art, it does not derive patentability by being used in a "diving-flue" stove; there is no patentable relation between the construction of the internal flues of the stove and that combination of exit flue and boiler to which the claim relates.

(*b*) *Getz, supra,* had an exit flue constructed across the bottom and up the rear upright side of his boiler. *Barlow* had the same. *Bussey*, in patent of July 17, 1866 (Fig. 7), had the same, and in a diving-flue stove. In Stewart of 1859 the gases entered a chamber directly under the reservoir, and thence passed off by a pipe embraced within the walls of the reservoir.

In view of the state of the art as thus revealed, the claim is not tenable unless limited to an exit "*flue*" passing across the bottom of the reservoir *without change of area*, as contrasted with a hot-air *chamber* under the bottom of the reservoir.

(*c*) In defendant's stove there is a hot air *chamber* under the reservoir, and not a narrow "*flue*" constructed across the bottom. The construction is almost identical with that shown in the Stewart patent of 1859. In both the gases, emerging from the middle flue of the stove through a small orifice, expand into a chamber substantially co-extensive with the bottom of the reservoir. Thence they pass off through an escape pipe which is not placed against the external wall of the reservoir, but is within such wall, and thus takes up a portion of the reservoir space. Both stoves, moreover, are "diving-flue" stoves, although this is deemed immaterial. The fact, also, that in one the reservoir is "high up" and in the other "low down," is, for the purposes of this claim, wholly immaterial.

The same reasoning that would make defendant's stove an infringement of the claim, would make the Stewart patent an anticipation of it.

If the claim be limited to a narrow "*flue*" passing across the bottom of the reservoir, as contrasted with a hot-air *chamber*, defendant's stove of course does not infringe.

CLAIM 3 does not seem to be different in substance from claim 2, except that it provides that the orifice through which the products of combustion pass from the flue space immediately behind the oven out into the exit flue under the reservoir, shall be "below the top of the oven."

This condition of construction can have no possible relation to the action of the gases on the reservoir while passing through the exit flue; therefore, either this condition must be treated as surplusage (in which case the claim will be the same in substance as the former one), or the claim must fall as being for an unpatentable aggregation. It being old (as in Stewart) to take the gases out through an opening on a level with the top of the oven, into a flue or chamber under the reservoir, and it being old also (as in Spaulding of 1858, and Bussey of 1865,) to attach the reservoir so that its bottom shall be below the top of the oven, there certainly can be no invention in causing the gases to act on the low-down reservoir in precisely the same way in which before they had been made to act on the elevated reservoir, and therefore no invention in tapping the back plate of the stove at a point "below the top of the oven," this being rendered necessary by the changed position of the reservoir.

Under any aspect of the claim it seems to be anticipated by the Bussey Patent of July 17, 1866, (Fig. 7, and description in third part of p. 136.)

CLAIM 4 seems to differ from claim 3 only in the expressed condition that the reservoir shall be heated "by a direct draft from the fire box to the smoke pipe." This, however, is but a statement of the necessary operation of the construction covered by the other claims. Whenever (as in *Getz* of 1840, or in *Stewart* of 1859, or *Bussey* of July 17, 1866,) the exit pipe is in rear of the reservoir, and the gases on their passage thereto are brought in contact with the bottom of the reservoir, the latter must be heated by the direct draft. The fourth claim, therefore, is in substance the same as the third.

Claim 5 relates to a thin "shield plate" placed before the reservoir, and presupposes that the back plate of the stove has been removed and the front of the reservoir set into the flue space thereby exposed.

Defendants' stove does not embody such a construction, nor is this attempted to be proved in complainant's evidence.

In June, 1874, complainants made a license running to the defendant (Complt's Ex. K, pp. 80-1), whereby it was intended to confer on defendant the right to make stoves like Ex. G; but the Bussey re-issue No. 3,815 is not named among the nine patents specified in the license. It is a legitimate inference that complainants did not consider the stove to embody the invention to which said patent relates.

II.

There is another aspect in which the validity of the Bussey re-issue may be considered.

This re-issue was granted February 1, 1870. There is no averment in the bill that the re-issue is for the same invention as the original patent. This would have been good ground for demurrer. Although no demurrer was taken, it is a grave question whether, in the absence of the proper averment in the bill, there is any presumption that the re-issue is for the same invention as the original. If there is no such presumption, the re-issue must be treated as of its own date, and not as carrying the invention described in it back to the date of the original patent.

So considered, the patent will be found to be anticipated by the Tiffany patent of 1869.

In the Tiffany patent of 1869 (p. 147) there is a diving-flue stove and a low-down reservoir. The gases, taken from the middle flue of the stove, are conducted into a chamber under and coextensive with the bottom of the reservoir; thence they are carried off through a vertical pipe arranged at the rear of the reservoir but really occupying a portion of the reservoir space, instead of being wholly upon the exterior of the reservoir wall. The gases are thus confined to the bottom and rear side of the reservoir.

In every sense in which it could be urged that defendant's stove infringes the Bussey re-issue, the Tiffany patent will be found to anticipate it.

III.

The original Bussey patent, according to the bill of complaint, was issued July 24, 1866; a first re-issue was obtained September 28, 1869, and the second re-issue, the one in suit, February 1, 1870.

Complainants make no profert of the original patent, but, by reason of the reference made to it in the bill, it is believed to be in accordance with equity that defendant may read from it; and accordingly notice has been given to complainants that, with the permission of the Court, defendant will make use of the original patent at the hearing.

If, thus, it shall appear that the only claim of the original patent was a very limited one, as follows:

> "A three-flued cooking stove having the central flue extended so as to inclose on *the sides* and bottom the culinary boiler or hot-water reservoir, B, *the latter being so arranged as to rest upon or against the edges of the sides of said central flue*, so as to constitute the interior side or wall of the same, substantially as set forth."

it would seem that, under the law of re-issue as established by the more recent cases in the Supreme Court, the Bussey re-issue, taken out with greatly enlarged claims, three and a half years after the date of the original, and after other patents (as that of Tiffany) had been issued on similar constructions, cannot be held valid, or can only be sustained by limiting the new claims to cover the same ground as the original claim.

Nation and Little Patents, Nos. 142,933 and 142,934.

As to certain questions, these two patents may best be considered together.

I.

Complainants have not proved their exclusive title as set up in the bill at p. 7.

The answer, at p. 10, denies the assignment under which it is averred, in the bill, that Nation and Little conveyed to the complainants all their right, title and interest in the patents.

Complainants put in evidence two documents bearing on the question of title, Exhibits F and M. Both bear date June 2, 1874. Exhibit F (p. 79) purports to be an assignment from Nation and Little to Bussey and McLeod of various patents, including the two in question. Exhibit M (p. 82) is an agreement between the parties relating to the same transaction, and purports to state the consideration for the alleged assignment, Exhibit F, viz: one-half of all royalties received up to $10,000. Then follows this significant provision: "When said parties of second part [Nation and "Little] receive ten thousand dollars as aforesaid, *then said parties* "*of first part* [Bussey and McLeod] *become sole owners of said* "*patents*." No pretence is made that the ten thousand dollars has been paid. On the contrary, it is apparent from the testimony of McLeod (Q. 40 and 41, p. 52) and of Nation (p. 76), that this money has not been paid, and that Nation and Little, the patentees, are directly and pecuniarily interested in the result of this suit. They appear to be still the equitable if not the legal owners of the patent.

II.

The patents are invalid, having been granted to Nation and Little for a *joint* invention, when in fact Little did not participate in the acts of invention.

Ranson *v.* Mayor, &c., 1 Fish., 252.

Nation, called to give the history of the inventions (in rebuttal of Mr. Filley), makes it plain that, whatever the facts may have been as between himself and Filley, Little took no part in the inventions. Nation's ascription of the inventions to himself, and his silence as to any participation in their genesis by Little, overcomes any presumption arising from the form of the patents. The patents were obtained *ex parte;* now, the witness is brought into Court, and complainants are bound by his utterances.

The Answer denies that Nation and Little were "the first, original and *joint* inventors."

III.

The "Buck" stove, devised in 1872 by B. F. Clement, is a complete anticipation of the invention set forth in the claims of the Nation and Little patents.

Defendant's Exhibit "Buck Drawing" (p. 551) is made to a scale from Buck's stove, the "Colorado," (*Pickles*, p. 96–7). It shows an open air space between the back of the stove and the front of a low-down water reservoir (Claim 1 of Patent No. 142,933); an expanded flue or hot-air chamber under the bottom of the reservoir, with a small aperture leading into it from the middle rear flue of the stove, and a small exit passage (Claim 2 of Patent No. 142,933); and a detachable base pan, arranged to be secured to the back plate of the stove at its middle height, and forming both the expanded flue under the reservoir and the top of a warming closet beneath (the substance of the three claims of Patent No. 142,934). Defendant's Exhibit Model of Buck Stove does not show the base pan as detachable, but the testimony is most explicit that it was detachable on the original stove. (*Buck*, Q. 13, p. 102; *Clement*, Q. 31, p. 87; *Pickles*, Q. 10, p. 96), The "Buck Drawing" was made directly from the original stove (*Pickles*, Q. 11, p. 97).

The history of the "Buck" stove is as follows: B. F. Clement, superintendent of the foundry of Buck & Wright, undertook in 1872 to alter the stove previously known as the Paragon, by providing it with an extension at the rear for containing a water reservoir. He made a sketch from which his son J. F. Clement made the wood patterns. From the wood patterns iron patterns were made for a stove which was called the "Colorado." These castings were mounted up at the foundry into the complete stove, except that the back and bottom of the warming closet (C of "Buck Drawing") were lacking; as this was to be of sheet iron, the stove was sent from the foundry of Buck & Wright to their store, where all their sheet iron work was done, and there the structure was at once made complete.

Neither Buck & Wright nor their successors, the Buck Stove Works, put that particular stove upon the market. They found that the new rear attachment would make the stove "too fine a stove for a cheap stove," "too good a thing for a cheap thing," and accordingly, dropping the Colorado, they soon applied the same rear attachment to their more expensive first-class stoves called the "Brilliant" and the "Guarantee." (*Buck*, Q. 6, p. 102; *Clement*, Q. 13, p. 86.)

The original Colorado, from which the "Buck Drawing" was made direct, is still in existence, in the exact condition in which it appeared when first made (*Buck*, Q. 8, p. 102). It has stood in Buck's store, and Brigham, the model maker, has seen it "every day or two." (Q. 17, p. 100).

The work upon this improvement progressed steadily from the first sketch to its completion. The dates are as follows:

B. F. Clement says he made the sketch, from which the wood patterns were made, "as early as July and not later than August, [1872]. I am satisfied of that fact." (Q. 50, p. 88).

J. F. Clement began the patterns immediately after he finished the wood patterns of the Fire King, and says that it was "along in the summer time" (Q. 13 and 19, p. 98).

Reference to the moulder's time-book of Buck & Wright shows that the wood patterns of the Fire King had been sent to the foundry as early as August 7, 1872. (*B. F. Clement*, Q. 46-8, p. 88).

Buck says: "It certainly could not have been later than July or August that he [Clement] commenced on these patterns." (Q. 15, p. 102).

The wood patterns required perhaps eight weeks to make (*B. F. Clement*, x-Q. 1, p. 90); and the iron patterns perhaps six weeks or two months more. (*Buck*, Q. 16, p. 103).

The original wood patterns are still in existence. (*Clement*, Q. 24, p. 98).

The Colorado was sent from the foundry to the store in February, 1873. (*Buck*, Q. 22, p. 103).

The inventions were applied commercially, on the Brilliant and the Guarantee, as early as June, 1873. (*Buck*, Q. 6, 102; *Clement*, Q. 25, p. 87).

It thus appears that the sketch embodying the invention shown in the "Buck Drawing" was made as early as August, 1872; that wood patterns were made therefrom immediately afterwards; that the iron patterns followed in due time; that the stove embodying all the elements that enter into the present controversy was moulded up as early as February, 1873; and that it was adopted commercially as early as June, 1873. The invention really dates from August, 1872.

It does not appear, in opposition to this, at what date, prior to their application for these patents (in August, 1883), Nation and Little made the inventions now under discussion.

Nation (Q. 5, p. 58) conceived of something in the summer of 1872, but there is no testimony connecting that conception with the present inventions. It should be kept in mind that Nation and Little took out several other patents relating to reservoirs on cooking stoves contemporaneously with Nos. 142,933 and 142,934, and that three of these others have been put into this suit.

The first sketch pertinent to the present controversy, which Nation claims to have been made by him or Little (Nation, x-Q. 126-7, p. 70,) was Complt's Ex. "L" (p. 79,) which, it is claimed, was made about Nov. 8, 1872. He claims to have made another substantially like this at about the same time, but the second sketch has not been preserved.

As to this drawing "Exhibit L," and the subsequent sketch, Nation says (x-Q. 60, p. 64) that *they were not sufficient to enable a competent pattern maker to make patterns for the stove.*

Nation is unable to state with any exactness when he made working drawings of the invention illustrated in "Exhibit L"; or when the wood patterns were made, or the iron patterns were taken from the wood; nor does he state when a stove was mounted up. (x-Q. 143-7, p. 71).

He and Little, so far as appears, did not file an application for a patent until Aug. 1, 1873, (*Nation*, x-Q. 4, p. 59).

An examination of "Exhibit L" (which Nation says would not suffice for a competent pattern maker to work from) fails to reveal the inventions patented to Nation and Little by patents Nos. 142,933 and 142,934. The front of the reservoir is exposed to the direct impact of the flame--the very thing which it is the object of the construction set forth in claim 1 of 142,933 to avoid; nor is there in this sketch any indication of an "*expanded* flue" under the bottom of the reservoir--which constitutes the gist of claim 2 of said patent. Nor, again, is there any indication of the presence of a *detachable* or *portable* base pan, which is the main feature of patent No. 142,934.

This recital of facts justifies the averment in the first amended answer (p. 14), that anterior to the alleged invention thereof by Nation and Little, of the improvements claimed in patents Nos. 142,933 and 142,934, the same were known to and used by Charles H. Buck at his foundry in St. Louis—such facts, as the evidence shows, being also known to the Clements and to others named in the answer and called as witnesses.

Nation and Little, in face of these facts, cannot claim to be the first inventors.

This conclusion is not weakened by the settlement of the interference which arose between an application for a patent made by B. F. Clement and the several patents granted to Nation and Little. The agreement of settlement, Complt's Exhibit I (pp. 79-80), whereby Clement as principal and Buck as assignee agreed to withdraw the Clement application from the interference, specially provides for the contingency of "further investigation," and the establishment thereby of the fact that Clement was the prior inventor. Nation and Little provide by the agreement that in such event they shall become the owners of any patent that may be granted to Clement.

Moreover, it does not appear that Clement and Buck actually withdrew from the interference pursuant to the agreement, or that any award of priority as against Clement was ever made in the Patent Office or elsewhere.

IV.

The inventions comprised in patents No. 142,933 and No. 142,934 in fact were made by Giles F. Filley, and not by Nation and Little jointly, nor by either of them separately.

The history of the inventions, as told by Mr. Filley and Mr. Bell (pp. 106-122), is as follows; Mr. Filley and Mr. Bell, being respectively the president and the secretary of the corporation defendant, and Mr. Little being the superintendent of the foundry, and Mr. Nation a workman under pay, in charge of the pattern department.

The Excelsior Company had been making a "high reservoir" stove like Exhibit No. 20. The "whim and fashion" of the trade in 1872 seemed to make it expedient that the company should also build a "low-down" reservoir stove. Filley's associates had long been urging him to make such a stove. He was opposed to it, since he deemed,(as he still deems), the low-down reservoir inferior to the high reservoir; and also became the low-downs on the market had moved defective. At length he yielded to the persuasions of his associates. Having taken a nominal license under a patent of Bussey & McLeod (probably the Bussey patent of 1865), he procured one of their stoves, and sent it directly to his pattern shop, where he had it dismembered for the purpose of studying carefully its construction and operation. Filley says that as the result of such examination he was "satisfied that the construction was wrong and the operation not complete," and "we concluded that we would not adopt the plan of the Bussey reservoir." His consideration of the subject extended over a little more than a month, and he had daily conversations with Nation and with Little about it. Several times he suggested to Nation "a construction by which the fire would pass *under* the reservoir rather than to the side," *i. e.*, up along the front, as in Bussey. On one of these occasions Nation replied by making a sketch in which the gases were carried into a chamber under the reservoir and then returned into the body of the stove, and submitted such sketch to Filley. This plan of Nation's was promptly rejected by Filley, as embodying a construction already in use by Chamberlain. Bell describes this Chamberlain construction fully (Q. 15-22, p. 118). It was not the construction now in controversy. That same night Filley at his own house made the drawing, Defendant's Exhibit "Filley Sketch," (p. 552). The next morning, contrary to his custom, he went to his foundry before going to the store; this he did to show his sketch to Nation, and he then instructed Nation to make "a more perfect and enlarged sketch," to be ready for Filley in the afternoon, and to go on immediately and get up working drawings (Filley, Q. 6, p. 106).

Filley on showing this sketch to Nation, explained it fully, instructing him "how the closet could be attached to the stove, and the base pan to the closet, or the base pan to the stove and the closet to the base pan;" and how the reservoir was to be reversible so as to bring the escape flue at the front or at the rear. Nation made no mention of having conceived of such a construction, but remarked on seeing Filley's sketch, "that seems to have accomplished the purpose intended.." (*Filley*, Q. 14 and 15, p. 108; x Q. 1, p. 112).

It was on or about October 14, 1872, when the Bussey stove was taken to Filley's pattern shop for examination. (*Filley*, Q. 6, p. 106). It was on or about November 18, when Filley made his sketch (*Filley*, Q. 11 and 12, p. 107; *Bell*, Q. 8 and 9, p. 117).

Work on the patterns was begun immediately after Filley's sketch was made, and the first stove like Exhibit G was made and shipped as early as April, 1873 (*Filley*, Q. 31, p. 110; *Bell*, x Q. 21, p. 122.)

The following are the more important parts of Mr. Filley's testimony, as showing the actual history of the invention:

> Int. 5. Will you please state when you commenced in your foundry to make stoves of that description, such as shown in the model, as illustrated in Complainant's Exhibit G?
>
> A. We commenced making that stove—commenced the drawing about the 18th or 20th of November, 1872.
>
> Int. 6. Now, state under what circumstances you commenced making a stove of that kind; what led you to do it?
>
> A. Some few months prior to that time we had obtained a license from Messrs. Bussey and McLeod, for the purpose of attaching the low reservoir to a stove that we were making. I sent to Troy—I think it was—it might have been Chicago, for one of their stoves—no, I am pretty sure it was Chicago, with a view of examining the stove, with a view of making the attachment to the patterns that we were then making; I might say we were then just about completing a set of patterns, what we called a plain stove, that is, a stove with a low reservoir, for which this was to be an attachment; I took that stove of Messrs. Bussey & McLeod, that arrtved here somewhere about the 14th of October, 1872, into my pattern shop, set it up on its end, had the reservoir detached, back plate detached, etc., with a view of seeing more particularly its construction and operation. This was a daily practice for a month, or nearly so, if not quite. I was fully satisfied that the construction was wrong and the operation not complete, or not what we would call a good operation. I was dissatisfied with the arrangement and concluded that we would not use that construction. This was a matter of conversation between myself and our pattern makers, Mr. Nation and Mr. Little, and other parties in our pattern shop. It was a matter of conversation and examination daily for a month or more, and we concluded that we would not adopt the plan of the Bussey reservoir. In conversation with Mr. Nation at that time, I told him, or prior to that time I told him that we wanted a construction by which the fire would pass under the reservoir rather than to the side of the reservoir. This conversation happened several times. Just on the completion of these patterns that I have spoken about, I called Mr. Nation's attention to this thing again, and he made this remark, with a sketch: "Why not make a base pan this way, and put in flue strips, so as to take the fire down one of these corners of the stove into the base pan, and return back into the body of the stove?" Says I, "Mr. Nation, we don't want that; that is what Chamberlain has made at Cincinnati, we don't want that." Then the conversation ended. That night, when I went home, I made a sketch of a construction that I wanted, with a desire to pro-

duce the result that we wanted to produce. As my usual custom was to go to the store next morning, that is, to go to the store in the forenoon, and then to the foundry in the afternoon, I, immediately after my breakfast, went to the foundry without going to the store, and showed Mr. Nation my sketch, and asked him to make for me a more perfect sketch that day, which I would get when I went to the foundry that evening, of the construction that we proposed to make, and immediately go on and get up the drawings for the completion of this arrangement. He went on through that day and made this sketch, which I got the evening that I went up there. I instructed him to go on immediately and get up the drawing for the application of this reservoir and closet to stoves that we had made. We commenced from that day to make those improvements.

Int. 7. Have you that sketch with you that you showed Mr. Nation?

A. I have.

Int. 8. Will you please produce it?

A. I produce the sketch, and attach it to a larger piece of paper, there being nothing on the back of the sketch.

(Sketch offered in evidence, and marked "Defendant's Exhibit Filley's sketch.',)

Int. 9. Can you tell when that sketch was made, what day?

A. Not exactly.

Int. 10. As near as you can?

A. I can only tell it by reference to circumstances that transpired at my house.

Int. 11. What were those?

A. A gentleman was stopping at my house by the name of Stewart, and this gentleman and my family wanted to hear some reading of Vanderhoff, and were desirous of my going with them, and I told them, no, I would stay at home; and while they were gone I made that sketch, and on their return from the reading I jokingly said to them that while they were gone down to the reading to spend some money and to get a little pleasure, I had made an improvement that was worth something to the stove trade.

Int. 12. Now when was that; what was the date?

A. That was about the 18th of November, 1872.

Int. 14. Please state what, if anything, was said by you, or instruction given by you when you handed that sketch to Mr. Nation, as to the manner of attaching those parts, how were they to be cast, etc.?

A. When I showed this sketch to Mr. Nation in the morning following, he made this remark, "That seems to have accomplished the purpose intended." And I then gave him instructions how that the closet could be attached to the stove, and the base pan to the closet, or the base pan to the stove and the closet to the base pan. This boiler A was to be reversible with a flue through it, may be placed at the back end or the front end; that is, the back or front of the reservoir, the boiler to be reversible.

Int. 15. Please state if, when you showed that sketch to Mr. Nation, he said anything in regard to his having conceived of such a construction?

A. He did not say anything.

The account of the matter as thus given by Mr. Filley is fully corroborated at all important points by Mr. Bell.

As opposed to the testimony of these two most reputable witnesses, and to the presumptions in the case arising from the relation of employer and employee, the complainants rely upon the testimony of Mr. Nation and a Mr. Clow. *Little is not called, nor is his absence accounted for ; and it is to be noted that no facts in the testimony of Nation tend to show that Little had any part in originating the inventions.*

Nation concedes that he was in the habit of taking his orders for changes of patterns from Filley (x Q. 7, p. 59); that in October, 1872, a Bussey stove was "brought to the pattern shop for the purpose of examination ;" that for this purpose the stove was partially dismembered (x Q. 10 and 11); that it remained in the pattern shop "several weeks during the examination" (x Q. 17, p. 60); that Filley was there "repeatedly, day after day, examining that stove * * * for the purpose of determining in what "way to change it, in order to produce the results which he sought" (x Q. 14 and 15, p. 60); that Filley was the first to suggest that the Bussey construction was an imperfect one and should be improved upon, and that Filley "ordered that stove to be taken apart "so that its construction might be more carefully examined, * * * "for the purpose of seeing how it might be improved" (x Q.101-3, p. 67); *and that some time in the month of November, Filley showed him the drawing now marked as Deff's. Exhibit "Filley Sketch," illustrating Filley's ideas of the changes that should be made* (x Q. 163-5).

Notwithstanding these admissions, Nation claims that prior to seeing Filley's sketch he had made a suggestion to Filley which had an important bearing on the inventions ; also, that he had made two several sketches embodying the inventions, the more imperfect of which he claims to have shown to Filley on the same day on which he saw Filley's sketch.

Nation says that he suggested to Filley the use of a base pan and heating the bottom surface of the reservoir (x Q. 20, p. 60).

In answer to x Q. 41-44 he admits that this suggestion, if made by him, was of a most indefinite and general character. "I can't " tell that there was anything more than a suggestion made at " that time. *I can't tell the exact subject.*". "The first sugges- " tion I remember to have made was that they should heat the " reservoir only on the bottom or under the entire surface of the " bottom. That is about as near as I remember the subject of the " conversation."

(*a.*) This suggestion does not touch the invention in controversy. Among other things, it does not provide for the escape of the gases up *along the rear upright side of the reservoir*, and Nation admits (as may be seen in the Spaulding Patent, Rec., p. 135), that the suggestion is consistent with a construction whereby the gases after expanding under the reservoir are returned into the flues of the stove. Nor, again, does it provide for the *detachability* of the base pan; nor for an *air space* between the reservoir and the back of the stove.

As base pans or hot-air chambers extending under the bottom of water reservoirs were old (not only with high reservoirs, as in the Stewart patent, but also with the low-downs, as the Spaulding), it is apparent that Nation's alleged suggestion to Filley did not touch any one of the features of novelty on which patents Nos. 142,933 and 142,934 must rest.

(*b.*) As opposed to Nation, Filley says that *he* was the one to suggest bringing the gases into contact with the bottom of the reservoir; and the correctness of this version of the affair seems put beyond doubt by the testimony of complainants' witness Clow, who was a workman in the pattern shop. Clow remembers that the Bussey stove was under discussion "three or four weeks," Mr. Filley being there "about every day," and says that he heard *Filley* make the suggestion that he "wanted the bottom of the reservoir heated," and that he heard this "*a good many times.*" (x-Q. 11-15, p. 78).

(*c.*) In view of the confessedly indefinite character of Nation's alleged suggestion, and his hesitating recollection about it, it is more than likely that the conversation to which he refers is in fact the same one about which Filley testifies, and in which Nation described an arrangement of flue strips in the base pan for returning the gases into the flues of the stove, substantially like the older structure of Chamberlain This probability is heightened by Nation's answer to x Qs. 37–40, in which practically he admits that he may have had a conversation with Mr. Filley in regard to the Chamberlain construction in connection with the proposed changes in the Bussey stove.

2. But Nation also claims that before he saw "Filley's Sketch" he himself had made two several sketches, one being the drawing Exhibit L in evidence (which he never showed to Filley), and a second sketch, not preserved, but alleged to represent substantially the same principle, and which he says was shown to Filley.

This Exhibit L and its companion sketch seem to be complainants' chief reliance. Defendant contends that the account given of these sketches is not deserving of the slightest credence; and, secondly, that the sketches are unimportant, as not showing any feature of the inventions now in controversy.

(*a*) Exhibit L, Nation claims, was made November 8, 1872 (Q. 11, p. 58).

The second sketch was made after Exhibit L (x Q. 56, p. 63). It was made eight or nine days before it was shown to Filley (x Q. 91, p. 66).

It was shown to Filley two or three days after the date of Nation's pretended suggestion (*supra*) of carrying the gases under the entire bottom of the reservoir (x Q. 57, p. 63).

Nation was accustomed to carry the sketch in his pocket (x Q. 84–6, p. 66).

The occasion of showing the sketch to Filley at last was that Filley showed his sketch to Nation. "Mr. Filley showed me a sketch that he had, and I showed him this at the same time, the time he showed me his'n." (x Q. 87, p. 66.)

Thus Nation charges himself with the onerous duty of maintaining the proposition that he and Filley were diligently studying the Bussey stove and conferring daily as to the modes of overcoming its admitted defects, when he himself had already made the two sketches which are now brought forward as embodying the mode finally adopted to this end.

According to Nation, again, the second of these sketches must have been made not less than five or six days before the pretended oral suggestion of Nation to Filley described in answers to x Q. 41-4, and the first one, Exhibit L., must have been made still earlier. If so, it is passing belief that Nation should have contented himself, at the later day, with the vague suggestion of heating the bottom of the reservoir, without even indicating how the gases were to escape from the heating chamber—especially as he seems to have had the second sketch about his person and convenient for exhibition.

Why, again, having these two sketches in his possession should he have withheld them from Filley until Filley had made and shown his sketch to Nation.

Nation on cross examination fails to give any satisfactory explanation on these points—(x Q. 104-110, p. 68; x Q. 133-5, p. 70).

He testifies as follows:

> Cross-Int. 104. Now, can you give me any explanation of why, if this construction was so accurately reduced to a drawing, as shown by Exhibit L, you did not the moment the subject was broached explain to Mr. Filley your idea of the way of remedying this defect?
>
> A. I do not know that I have any way to explain it. It is one of those things that we do not at all times tell all we know about these things. We have been engaged in other patent business, getting out patents for low-down reservoir stoves, as I said before, and it was a custom for me to make drawings at home, and, as it is with most inventors, to keep these things, some of them, to myself.
>
> Cross-Int. 105. You were employed by Mr. Filley for the express purpose of making patterns for the construction of this and other stoves, were you not?
>
> A. Making patterns for all stoves; yes, sir.
>
> Cross Int. 106. He consulted you as his pattern maker, in regard to the mode of changing the construction of this stove?
>
> A. Yes, sir; yes.
>
> Cross-Int. 107. Was it not your duty to tell him any practical mode that you knew of improving that construction?
>
> A. I done so. I told him at the time that he suggested that he wanted it improved. I told him of the sheet-flue under the bottom, I gave him my idea of it.

Cross-Int. 108. After you gave him your idea, why didn't you show him the drawing, which would have explained the idea perfectly?

A. I don't think I had it with me at the time.

Cross-Int. 109. Why didn't you tell him you had a drawing, and that you would bring it and show it to him?

A. I don't know but I done so; I am not sure. We often talk those matters over; I can't tell; I am not sure; I may have said so; I usually do.

Cross Int. 110. Why, when you showed him the drawing, did you show him an imperfect one instead of a perfect one?

A. As far as the construction was concerned it is the same; I could explain it just as well; you could hardly call it an imperfect one, although it is reduced in size and perhaps the lines are not quite as straight as this is.

* * * * * *

Cross Int. 133. This sketch, you say, was drawn out or was suggested by the want of a change in the Bussey stove; now, if you made that sketch L at the shop while this matter was under discussion, why didn't you show it to Mr. Filley?

A. Well, I don't know that I made it at the shop, Mr. Boyd; I don't know that I did; *I don't know that I did;* I wouldn't be willing to say it; I don't know when I made it, but I have an idea I made it at home.

Cross Int. 134. If you made it at home, under these circumstances, why didn't you bring it to the shop and show it to Mr. Filley?

A. Well, the stove, as I said before, laid there some time before it was a matter of discussion, or before we got to work at it, and it was hardly time; these things require perfecting before they are submitted.

Cross Int. 135. But you did not perfect the drawing which you did actually showed him, did you?

A. No, sir, not perfected, I gave him the details of it. The drawing I showed Mr. Filley, I would not be certain whether I drew all that right there before him or not. [In answer to x-Q. 91, this witness said he had made the sketch eight or nine days before] I am not certain.

Plainly this story of Nation's about the two sketches is an after-thought, devised to rebut the account of the invention as given by Filley.

It is noticable that Filley was not cross-examined with reference to the possible existence of any such sketches as Exhibit L.; and also that Little was not produced, by subpœna or otherwise, to corroborate Nation in any respect.

The attempt made through Clow to carry back the date of Exhibit L. is sufficient to brand the whole transaction as fraudulent. This drawing as introduced in evidence appears to have been signed by Clow as a witness on November 8, 1872. But Clow when called to the stand gives this account of the signing and dating of the drawing: "It was some time in the latter part of "November when I was called on [by Little and Nation] to sign "this, and they wanted me to sign it as having seen it on the "8th. I told them I was not certain of that, the exact date. "'Well,' they said, 'that was the date,' and wanted me to sign "it as about that date; and I did so, though I didn't mention "it." (Q. 7, p. 77).

The testimony of Mr. Nation, on his direct examination, as to his conceptions in the summer of 1872, and the making of a model November 10, 1872, and the filing of an application in November, is of no value. It is not exact as relating to any invention now in controversy.

Nation's testimony about Exhibit L, being shown to be full of inconsistencies, Little keeping aloof from the witness stand, and Clow being shown to have lent himself to the manufacture of evidence, the truth of which he at the time could not vouch for, further comment on the *genuineness* of Exhibit L is unnecessary.

(*b.*) But, secondly, Nation's sketch, Exhibit L, whenever made, and the similar sketch alleged to have been shown to Filley, are unimportant.

Nation says, that from the sketch Exhibit L (which was the more perfect one—x Q. 110, p. 68.) and from the sketch shown Mr. Filley, a *competent pattern-maker could not make patterns for the stove* (x Q. 60, p. 64.)

He also says (x Q. 163, p. 72,) that the sketch he showed Mr. Filley "was a different construction from the construction shown in the Filley sketch." (Probably it was what Filley states, viz.: a construction like Chamberlain's, the only sketch that Filley knows of as made by Nation.)

Again, Exhibit L does not show any of the features of novelty to which the several claims of the two Nation and Little patents relate. It does not have the air space between the reservoir and the stove back, which is the gist of claim 1 of patent 142,933; nor does it show a "sheet flue under the entire bottom of the reservoir," with a "small exit passage or tube" leading therefrom, as called for by claim 2 of said patent; nor is there any indication in it of a "detachable" or "portable base pan," as called for by all the claims of patent 142,934.

Nor does Nation, in his deposition, any where or any how, intimate that he had suggested to Filley the feature of the air space at front of reservoir, or the detachability of the base pan.

Finally, it must be manifest, on comparing defendant's stove as built, (Complainants' Ex. G, or Defendant's Ex. O), with the Nation sketch L, and with the "Filley Sketch" respectively, (Nation says that the sketches represent different constructions—x Q. 163, p. 72), that it was Mr. Filley's ideas that were adopted. In the Nation drawing the reservoir is exposed in front to the direct impact of the products of combustion, and the vertical part of the exit flue ascends *behind* the reservoir. In Filley's sketch, on the other hand, the back of the stove is interposed between the front of the reservoir and the gases in the flue space of the stove, and the vertical part of the exit flue is a pipe passing up *through* the reservoir. In both of these particulars the stove as built has been like "Filley's Sketch."

Complainants are understood to have urged three propositions below, in opposition to the view that the inventions patented to Nation and Little originated with Mr. Filley.

First, they say that, if Filley deemed himself the inventor, he should have proceeded to take a patent for the invention; particularly after he learned that Nation and Little had made one or more applications. *Secondly*, they say that Filley and Bell, as officers of the defendant corporation, advised the complainants to purchase the Nation and Little patents after they were issued, which, it is contended, is inconsistent with the claim that Filley was, or deemed himself to be, the real inventor. *Third*, they say that the corporation defendant, with the full consent of its president, Mr. Filley, took a license from complainants under the nation and Little patents, and is thereby estopped from now asserting that the invention originated with Mr. Filley.

Considering these propositions in the above order, the following are shown to be the facts:

1. Mr. Filley, in answer to x-Q 3 and 4 (p. 112) and in answer to Q. 26 (p. 109) fully explains why he did not himself apply for and secure a patent. He did, immediately after making the invention, contemplate applying for a patent, and drew up two several specifications, with claims. These he never filed, because, among other things, he had doubts whether there was any invention in what he had done. He says (x Q. 3.): "It was simply taking a com-" mon Stewart reservoir and dropping it down four or five inches, " which perhaps would be considered as no invention." When he found that Nation & Little had made one or more applications, he was indignant and was only dissuaded from discharging them by Mr. Bell's intercessions, who urged upon him that their peculiar relations in business at that time were such that they could not afford to take such a step, but would better compromise it or do anything rather than get into a law trouble.

This, it is to be remembered, was at the time when Mr. Filley was completing the payment of his obligations, amounting to some $1,300,000, incurred as an indorser for a Mr. Howe. This was a critical juncture in his affairs, and he shrank from a rupture with two of his most important and useful men. Nation and Little both said that the company might go on and make the stoves under a light royalty if they so chose. They even offered (Q. 26) to Mr. Filley the major interest in the patent or patents, if he would simply pay the expenses of obtaining the same. Mr. Bell testifies (x Q. 14, p. 121) that, by reason of Mr Filley's necessities and in order to help him out of his difficulties, he, Bell, was ready to make any compromise so far as preventing getting into litigation in reference to the matter. He says: "I did not think it was a "time we could afford it, particularly as he (Filley) wished, time "and again, to discharge both of these men, which I bitterly op-"posed."

2. In regard to the attempt to hold Filley and Bell responsible for the purchase of the Nation and Little patents, Mr. Filley denies that he advised the purchase of the patents or promised to take a license under them if purchased (x-Q. 12, 13, p. 113). On the contrary, he says (x-Q. 13) that when McLeod was negotiating for the purchase of the patents he expressly warned him that Nation and Little were not the inventors, and exhibited to him various papers tending to establish such fact.

Complainants, therefore, bought with full notice of the adverse claims of Mr. Filley.

Mr. Bell says (x-Q. 12, p. 121) that his recollection is that he knew nothing about the arrangement of McLeod with Nation and Little until after McLeod had purchased the patents, and therefore could not have advised the purchase or made any promise to take licenses in case the purchase was made. Moreover, it appears (*McLeod*, x-Q. 40 and 41, p. 52) that complainants paid nothing for the patents in question, but simply agreed to pay a portion of such moneys, if any, as they might receive by way of royalties. (See also Complainant's Exhibit M, p. 82.)

Under such state of facts there can exist no estoppel.

3. The fact that defendant at one time accepted a license from complainants which, among a large list of patents, included these two of Nation and Little, can not be held to affect defendant's right now to assert that the inventions originated with Filley, and not with Nation and Little.

The complainants held a large number of patents relating to low-down reservoir cooking stoves. The defendant, in obedience to the then prevailing "whim and fashion" of the trade, had determined to manufacture a low-down reservoir. Thereupon, it accepted a license enbracing some nine different patents, these two of Nation and Little being included in the number. It does not appear that defendant was solicitous to have these particular patents included in the licensee. Even if it had been otherwise, the right of a licensee to repudiate his license and contest the validity of the patent or patents to which it relates, is too well established to need citation of authorities.

In conclusion, it is believed that when two rival claimants for an invention sustain to each other the relation of employer and employee, and it appears that both the employee and the employer were at work upon a problem suggested by the latter, and that the employee was fully paid for his time and services, the presumptions are all in favor of the employer.

V.

But, aside from any prior knowledge by Clement and by Buck, or of any question as between Nation and Filley of the true origin of the patented inventions, defendant asserts that in view of the prior state of the art there is no patentable invention disclosed in patents No. 142,933 and No. 142,934.

Patent No. 142,933.

Claim 1 of patent 142,933 is as follows:

> "The combination with the back plate 1 of the cooking stove A, of the reservoir C, arranged on a support about midway between the top and bottom plates of the stove, and the air chamber *b* between the stove back and reservoir front, open at the top and communicating with the air of the room, substantially as and for the purpose set forth."

The specification (second paragraph of second column on page 1) puts the proper limitation upon this claim when it contrasts the invention with "the ordinary method" of constructing low-down reservoirs, in which it is stated that "the flame is made to strike directly upon the front "surface of the reservoir, thereby rendering it liable to crack "while replenishing with cold water upon the heated plates." The reference of course is to the well known construction in which a part of the back plate of the stove is removed and the front of the reservoir sets directly into the flue space; as in the Bussey re-issue of July 24, 1866 (*Rec.*, p. 549.)

Manifestly the gist of the invention is in so arranging the low-down reservoir that the upper part of its front plate shall not be exposed to the direct impact of the flame. This is effected by not removing the back plate of the stove, but locating the reservoir behind such plate.

Substantially the same construction is shown in each of the following patents:

McDowell	patent of	May, 1871	(*Rec.*, p. 153.)
Tiffany	"	August, 1869	(" p. 147.)
Spaulding	"	June, 1866,	(" p. 135.)
Paris	"	April, 1871	(" p. 151.)
Hyde	"	June, 1862	(" p. 156.)
"	"	March, 1863,	(" p. 158.)

In all of these the back plate of the stove opposite the upper part of the reservoir is left intact, and in at least two of them (McDowell and Tiffany) there is a pronounced air space left between the stove and the reservoir.

McDowell would seem to be a complete anticipation of the claim. To be sure, in the McDowell, a branch from the bottom part of the reservoir is exposed to the direct action of the gases, but so it is with the bottom of the Nation & Little reservoir. In McDowell all the upper face of the reservoir is protected from overheating by an air space, open at the top, between it and the stove. As explained in the patent in suit, it is the *upper part* of the reservoir which is liable to be injured by the direct impact of the flame as the water is lowered.

In the other patents named above, the air space is not so great, but it still exists, and the claim in question does not define the extent of the air space to which it relates.

Stewart's patent of 1859 (p. 129) would seem, also, to be an answer to this claim. Stewart heats at the bottom, and the air circulates freely against all sides of the reservoir. It can hardly be considered invention to drop the reservoir merely, leaving sufficient space for the same circulation of air; particularly as low-down reservoirs also were old. No new effect is produced; and in both stoves the heat transmitted through the back plate cannot injure the front of the reservoir.

Claim 2 of patent No. 142,933 is as follows:

> "The combination, with the stove A and reservoir C, of the small opening *a*, the sheet flue G under the entire bottom of the reservoir, and the small exit passage or pipe E, all substantially as and for the purposes herein set forth."

This claim manifestly is not limited, either in terms or by implication, to a low-down reservoir. The principle is precisely the same, whatever the elevation of the reservoir.

The gist of the invention consists in taking the products of combustion through a small opening into an expanded chamber extending under the entire bottom of the reservoir, but not embracing the sides thereof, and thence allowing them to escape by a small exit passage or pipe. This, the specification explains, allows the gases to expand under and against the entire bottom of the reservoir, while the small exit pipe prevents the too rapid escape of the gases. Consequently, the water becomes hot in a short time.

Precisely such a construction is seen in the old Stewart patent of 1859 (Rec., p. 129). This is a high reservoir stove, but the gases emerging from a small aperture enter a chamber extending under the entire bottom of the reservoir, and thence they escape through a comparatively small pipe passing through the reservoir (substantially as is the case with defendant's stove).

The Bussey patent of July 17, 1866, (p. 137), for present purposes is precisely the same as the Stewart patent.

The Tiffany patent (p. 147), shows a structure which meets every element of construction expressed in the claim. It has a "small opening" leading out from the middle flue of the stove; it has a "sheet flue under the entire bottom of the reservoir;" and it has a "small exit passage or pipe" leading out from this sheet flue. Moreover, it has a low-down reservoir.

Patent No. 142,934.

The claims of the patent are as follows:

> 1. The detachable base-pan or flue-shell D, attached to the body at a point near the center of the back plate of the stove by means of hooks *a. a.* cast on the base-pan, and pins *b. b.* on the stove body, substantially for the purposes herein set forth.
>
> 2. The portable reservoir F, with flue E in the rear side, in combination with the portable base-pan or flue-shell D, substantially as and for rhe purposes herein set forth.
>
> 3. The combination, with a three-flue stove having damper H arranged as described, of the portable base-pan or flue-shell D and warming closet G, all substantially as and for the purposes herein set forth.

These claims seem to be completely anticipated and devoid of merit.

(*a.*) The Tiffany patent of August 17, 1869 (p. 147,) contains every element of each and all of the claims.

In this patent there is a low-down water resorvoir arranged at the rear of a three-flue stove, and a warming closet below the reservoir, as in the Nation and Little structure.

The products of combustion are brought out from the flues of the stove into a base pan or chamber immediately below the reservoir and forming the top of the closet, as in Nation and Little.

The flue by means of which the gases escape from this base pan is "in the rear side" of the reservoir, being removable with it.

The Tiffany stove is a "three-flue" structure, and of course must have a damper capable of opening and closing the middle flue, which is the function of the damper H of Nation and Little. Such damper is shown in the Tiffany model.

The Tiffany patent provides also for the detachability and portability of the reservoir (or tank) and the closet, and also for attaching them to the body of the stove by means of hooks and pins—the language of the specification being as follows:

> "The tank and closet being constructed separately or together, independent of the stove, they are capable of being detached therefrom, leaving the stove complete without their attachment, and leaving them complete without being attached to the stove.
>
> "*The tank and closet may be attached to the stove in many ways. A very simple way, where they are attached to the back of the stove as represented in the drawings, is by means of lugs or hooks, either cast in the back of the stove, with a corresponding eye in the side of the case surrounding the tank, or in the top and side of the closet, or the attaching hook and eye may be reversed.*"

(*b*) The Phillips patent also of 1870 (p. 172,) is an anticipation of the claims in question.

It shows a detachable or portable low-down water tank attached to the rear of a three-flue stove which has a damper in the middle flue. This tank or reservoir is secured in place by being "bolted to (or otherwise secured to) the rear end of the top plate of the stove" (the manifest mechanical equivalent of hooks and pins). Under the reservoir is a horizontal flue space, formed by a base pan or flue-shell, and this, instead of being cast on the back plate, may be cast separately and then attached in any convenient way. The vertical pipe leading out from the flue-shell is formed or cast "as an integral part of the reservoir," it being "located centrally" in it, "or forward *or backward*, as deemed best by the manufacturer."

Thus Phillips embraces all the features of the Nation and Little patent, save only the warming closet; but it cannot be maintained that it would be invention to put a warming closet (in itself an old device in such connections, see Bussey patent of July 17, 1866, fig. 2, p. 137,) under the Phillips reservoir.

(*c.*) The Slade patent of 1837 (p. 161) would seem an answer to the first claim. Slade shows two reservoirs (one at each end of the stove,) supported on detachable platforms, secured to the body of the stove by hooks and lugs, of the nature of pins. These platforms are made dishing, so as to form a chamber under substantially the entire bottom of the reservoir, into which the products of combustion from the stove can flow. This plate has a detachable base pan, attached substantially as called for by the claim in question.

As the gist of the claim is the *detachability* of the reservoir, and for the mode of its attachment (by hooks and pins), and as it was old in the art to attach reservoirs to the rear of stoves as well as to the sides, it is immaterial that Slade's dishing platforms are at the sides of his stove and not at the rear.

(*d.*) In addition to these direct anticipations by Tiffany, Phillips and Slade, as well as by the Buck stove as heretofore explained, it is submitted that, in view of the prior state of the art as regards the various elements making up the combinations covered by the patented claims, there is really no patentable invention set forth in such claims.

Thus, aside from the detachable base pans of Tiffany, Slade, Phillips and Buck, it was old in the art to make the hearths and ash-pans and other projecting parts of stoves *detachable*. (*Filley*, Q. 46-8, p. 111).

It was also old to attach these hearths and ash-pans by means of lugs and hooks, in precisely the same way in which the base pan of Exhibit G (one of defendant's stoves) is attached. (*Filley* Q 48).

Portable reservoirs were old, with an escape pipe or flue formed with or cast as a part of the reservoir—as in the Stewart patent of 1859 (p. 129), and the Bussey patent of July 17, 1866 (p. 137).

Such reservoirs, also, were made for the market as far back as 1864. Exhibit 20 is a model of such a structure. (*Filley*, Q. 34-37, p. 110).

It was old also to place a warming closet under a reservoir located at the rear of the stove—as in the said Bussey patent, in which the bottom of the base pan beneath the reservoir forms the top of the closet.

In the face of such facts it is difficult to see what invention there is in any of the claims of the patent now in question.

Claim 1, at best, is a mere double and obvious use of an old mode of attaching any one of the projecting parts of a stove.

Claim 2 is really for an aggregation of old elements. There is no patentable relation between the special form of reservoir (*i. e.* one having a flue in its rear side) and the fact that the base pan on which it rests is made portable.

Claim 3 also is for an unpatentable aggregation. There is no patentable relation between the presence of the damper H and the fact that the base pan is portable, or that there is a warming closet, nor any patentable relation between the presence of the warming closet and the portability of the base pan.

Bell was right in saying (*x Q.* 5, *p.* 120) *that there was "no "invention" in the change which the Excelsior M'n'f'g Co. made in its stove in* 1873-4. *"It was," he says, "simply a re-"arrangement of our old reservoir which we had made for many "years* [*such as Deft's Ex. No.* 20], *lowering the bottom of the "reservoir down to a line, say to the center of the stove, while the "old line or bottom of the reservoir rested on the top of the stove."*

To the same effect, also, is the testimony of Filley, Q. 39 *and* 40, *p.* 110, *and x Q.* 3, *p.* 112.

Damages.

1. The decree awarding "one cent as damages" to complainants should be reversed. The bill of complaint prays for *profits* only and is silent as to *damages*. Wherefore complainants are not entitled to any decree for damages.

2. As shown above, the Nation and Little patents Nos. 142,933 and 142,934, under which the award of damages (one cent) was made, are invalid. The same is true also of the Bussey patent, which likewise has not been infringed.

3. Aside from these considerations, the claim of claimants that the defendant should pay one dollar as damages on each low-down reservoir stove made from Jan. 1, 1875, to the date of the accounting before the Master, amounting to 14,972 in number, less 1100 made in 1874 and paid for in lump, is untenable.

This claim rests upon the erroneous assumptions, first, that from June 3, 1874, to the date of the accounting, the defendant made 14,972 stoves which embodied all of the features of the Nation & Little inventions, and, second, that the license held by the defendant during a part of the year 1873, under nine patents, of itself establishes a measure of damages as to each and all of the said nine patents.

(*a*) Defendant in its answer admits that it has made stoves embodying the devices set forth in the several claims of the patents Nos. 142,933 and 142,934. This admission is satisfied by the manufacture of *two* such stoves.

There is no evidence that all of the 14,972 low-reservoir stoves made by defendant were of this character. The opening question put by complainants' counsel to Mr. Filley, before the master (p. 22), might seem to favor this view: but Mr. Bell's answer to Q. 1 (p. 26) shows that the statement A, produced before the master, was a statement simply of the number of low-reservoir stoves made by complainant, without regard to their relation to the Nation and Little patents. Mr. Filley's cross-examination before the master (pp. 24 and 25) proves that in fact the stoves of defendant as a rule did not have some of the features patented to Nation and Little.

(*b*) The license (Complt's Ex. K., pp. 80 and 81) taken by defendant June 3, 1874, under nine several patents owned by complainants (nominally at $1 per stove, but, after deducting the rebate, really for 50 cents per stove), does not establish a measure of damages.

While, under the contract, defendant was bound to pay the royalty whether he used one or all of the patents, and as long as the contract subsisted might have sued for the full amount on each stove containing any one of the patented features, yet it would be absurd to contend that, after the cancellation of the contract (it was cancelled from and after Jan. 1, 1875), complainants would be *damaged* as much by the infringement of two of their patents as of all nine. If not, the royalty of fifty cents can furnish no basis for estimating damages, since no attempt is made to fix the relative value of the nine patents, and it is not to be presumed that they are of equal value.

Again, there is no evidence of any other licenses having been granted by complainants. The royalty named in a single license cannot be accepted as establishing a measure of damages for infringement.

Black *v.* Munson, 14 *Blatch.*, 268.
Judson *v.* Bradford, 3 *Bann. and Ard.*, 549.
Walker on Patents, § 557.

In Black *v.* Munson, Mr. Justice Hunt insisted upon it and emphasized the rule that the license fee must have become "fixed and established" and uniform, before royalty could be held to constitute a criterion of damages.

In the present case there was nothing in the terms of the license of 1874 to indicate what value either complainants or defendant put upon the use of the two Nation and Little patents now in question. It is fair to assume that both parties regarded one of the Bussey patents therein named as the chief inducement to the contract, and that the royalty named may have been fixed with reference to that patent alone, it being provided in effect that if such royalty was paid for that invention, the Nation and Little inventions might be used, if defendant should desire to use them, without further charge.

The Master's report (pp. 18-21,) contains an admirable statement of defendant's views on the mode of estimating damages: it seems unanswerable.

Complainants cannot have an award of damages on the ground of profits made by defendant, because, as hereinafter shown, there is no evidence that defendant made any profit whatever by its limited use of complainants' inventions.

Profits.

The bill contains a prayer for profits. As to this the Master reported (p. 21) as follows:

> "Relying apparently solely upon the license fee as the measure of their damages, complainants made no effort to show what profit defendant made or ought to have made by reason of these improvements, beyond a few interrogations concerning the cost of material and the profit in the low-down reservoir stoves put to Mr. Filley, who testified that he knew nothing on the subject, and to Mr. Bell, who replied that he could not tell the cost or value of any stoves of the kind mentioned, or the profit on them, without having certain data. It was not required to produce these data, and the enquiry ended there."

Accordingly, the Master did not find that any profits had been made by defendant, and no profits were awarded by the Court.

An inspection of the record will show that the Master was right in his view of the evidence, and that in fact no profits are shown to have been made by defendant.

Summary.

Bussey Patent.

A.—No ground is shown for reversing the decree of the Court below dismissing the bill as to this patent.

Claim 1:

If this claim be limited to an exit flue which traverses the *front* side of the reservoir as well as the bottom and rear side, defendant's stove does not infringe, since the front of the reservoir is *not* exposed to the contact of the products of combustion at any part.

If the claim be not so limited, it is anticipated by the *Bussey* patent of July 17, 1866, (Fig. 7); by *Getz* of 1840; by *Barlow* of 1816; and by *Spaulding* of 1858.

(Pages 8 and 9, *supra*).

Claim 2:

If this claim be limited to a narrow "*flue*" under the reservoir, as contrasted with a hot-air *chamber*, co-extensive with the bottom of the reservoir, there is no infringement.

If the claim is broad enough to include such hot-air chamber, it is anticipated by the *Stewart* patent of 1859. Also, by *Getz*, by *Barlow*, and by *Bussey* of July 17, 1866.

If the claim be limited to an exit flue the vertical part of which is formed *against the exterior* of the rear wall of the reservoir, there is no infringement; in defendant's stove the flue passes *through the body* of the reservoir.

If the claim be so construed as to include defendant's mode of constructing this part of the exit flue, it is anticipated by *Stewart*.

(Pages 9 and 10, *supra*).

Claim 3:

(1.) This claim is either the same in substance as Claim 2, or is for an unpatentable aggregation.

(2.) It is anticipated by the *Bussey* patent of July 17, 1866, (Fig. 7).

(Page 11, *supra*).

CLAIM 4:

In substance the same as the third.

(Page 11, *supra.*)

CLAIM 5:

No pretence of infringement.

B.—The bill of complaint containing no averment that the Bussey reissue (Complt's. Exhibit A) is for the same invention as the original patent, it may, so far as it concerns the question of novelty, be treated as if it were an original patent granted February 1, 1870.

Thus regarded, the *Tiffany* patent of 1869 will be found a complete anticipation of it, under any interpretation of the claims that can affect defendant's stove.

(Pages 12 and 13, *supra.*)

C.—If the Court should decide to compare the Bussey reissue with the original patent, it is believed that the claims of the patent, so far as by any liberality of interpretation they can be held to affect the defendant's stove, will be found to be unwarrantably and fatally enlarged.

(Page 13, *supra*)

Nation and Little Patents.

As to the Nation and Little Patents No. 142,933 and No. 142,934, the decree, awarding one cent as damages and awarding an injunction, should be reversed, for the following reasons:

A.—Complainants have not shown themselves the sole and exclusive owners of the patents, as alleged in the bill.

By agreement with the patentees they were to become the sole owners when $10,000 had been paid from the royalties received. This money has not been paid.

(Page 14, *supra.*)

B.—While the patents were granted on the theory that Nation and Little were *joint* inventors, it abundantly appears in the proofs that Little had no part in making the so-called inventions to which the patent related.

(Pages 14 and 15, *supra.*)

C. The "Buck Stove," invented by B. F. Clement, and known to him, to C. H. Buck and various others in St. Louis, is a complete anticipation of the constructions claimed in these patents.

The sketch for the patterns was made in July or August of 1872; the wood patterns were begun promptly afterwards; then followed the iron patterns in due time; and the "Colorado" (the name of the stove) was completed certainly as early as February, 1873.

The construction was adopted commercially, on the Brilliant and the Guarantee, soon after.

Nation, on the contrary, does not pretend to have made any sketch of the contested constructions until Nov. 8, 1872, and an examination of his Exhibit L, said to have been made at that date(but probably a piece of manufactured evidence), fails to reveal any one of the patented features.

Buck's "Colorado" was completed before any stove having the low-down reservoir had been made by Nation or his employers.

(Pages 15-18, *supra.*)

D.—So far as regards the claims of Nation and Little, Mr. G. F. Filley must be held to be the originator of the constructions claimed in the patents.

As president of the defendant corporation he was the employer of Nation; as a legitimate incident of such employment he directed Nation's attention to the desirability of modifying the construction of a low-down reservoir stove which Filley deemed defective; repeated conferences were had between them; Filley first showed to Nation a sketch which, as then explained, embodied all the features of construction afterwards patented to Nation and Little; Nation afterwards, by direction of Filley, made working drawings, from which the patterns were made for the stoves that defendant put on the market.

It is improbable that Nation's sketch, Exhibit L (Nation's chief piece of evidence), was made prior to Filley's sketch. It is immaterial when it was made, as it does not show any of the features of construction in controversy.

All the presumptions are in favor of Filley as the inventor.

(Pages 19-32, *supra.*)

E.—Nation and Little are anticipated otherwise than by the Buck Stove.

Patent No. 142,933.

CLAIM 1:

This is met, in terms, by the *McDowell* patent of 1871.

In substance, also, it is met by *Tiffany*, *Spaulding*, *Paris*, *Hyde* and *Stewart*.

(Page 33, *supra.*)

CLAIM 2:

Anticipated completely by the *Tiffany* patent of 1869, the *Bussey* patent of July 17, 1866, and by *Stewart* of 1859.

(Page 35, *supra.*)

Patent No. 142,934.

Each and all of the claims are anticipated by the *Tiffany* patent of 1869 and by the *Phillips* patent of 1870; the first claim also is met by *Slade* of 1837.

Also, as portable reservoirs were old in the art, as warming closets arranged beneath the reservoirs were old, as it was old to make the projecting parts of stoves (such as ash pans, hearths, and the like) detachable, such parts in use being attached to the stove by means of hooks and lugs or pins, there was no patentable invention involved in organizing the aggregations to which the claims of the patent relate.

(Pages 35-38, *supra.*)

F.—As to damages, while the answer admits the use of the features of construction referred to in the claims, there is no proof, by way of admission or otherwise, as to the number of such stoves made by the defendant. The license once held by the defendant under nine several patents, but subsequently discarded, of itself can form no criterion of damages. Moreover, the bill does not pray for damages.

(Pages 39-40, *supra.*)

G.—As to profits, which are prayed for in the bill, there is no proof of any profit made by the defendant.

(Page 41, *supra.*)

The existing decree should stand as to the Bussey patent and be reversed as to the Nation and Little patents, with costs to the defendant.

Respectfully submitted,

S. A. DUNCAN.